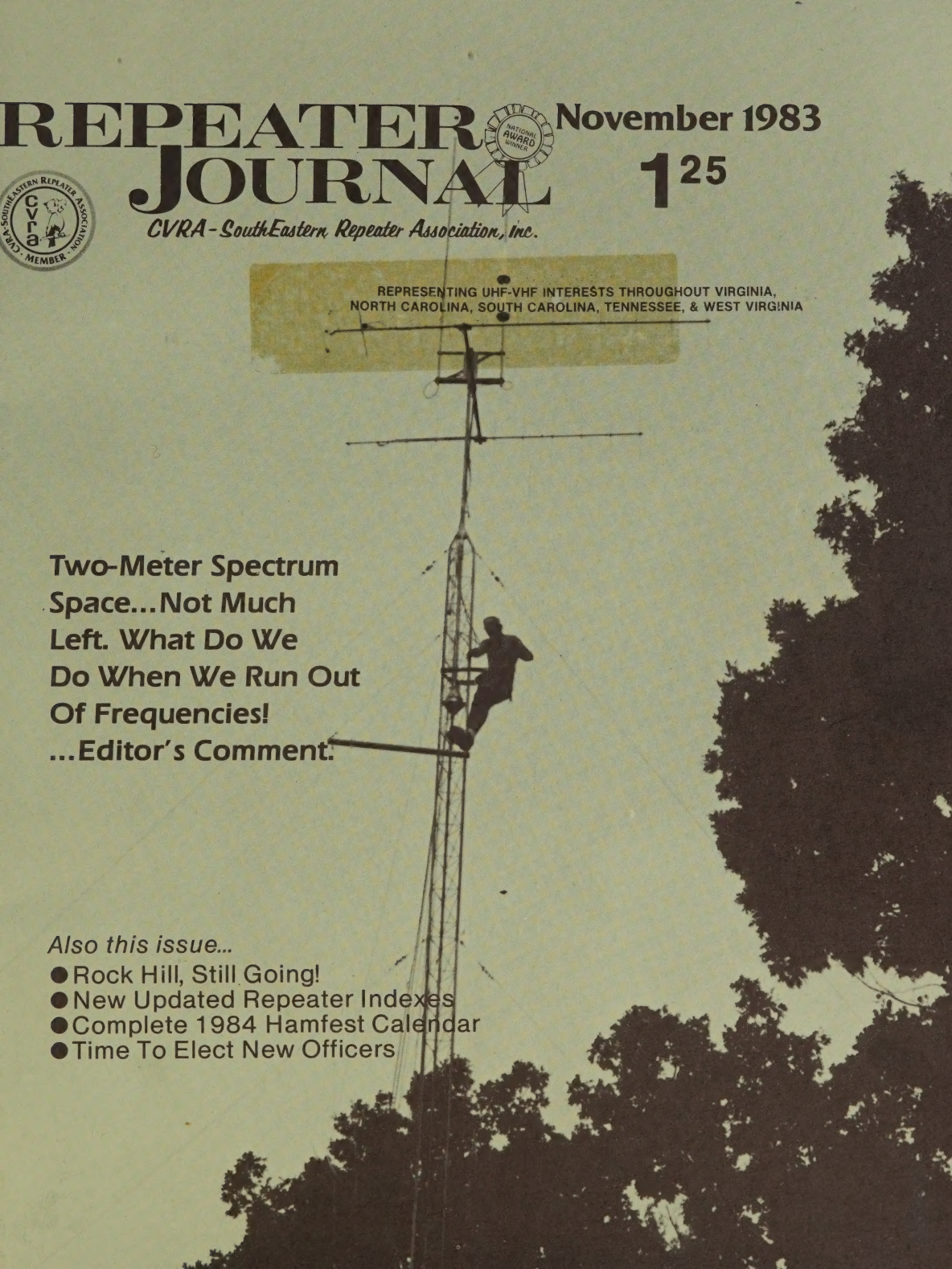
REPEATER JOURNAL

November 1983

1.25

CVRA - SouthEastern Repeater Association, Inc.

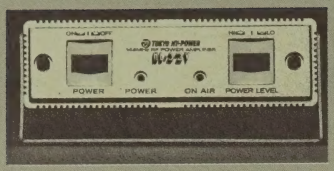
REPRESENTING UHF-VHF INTERESTS THROUGHOUT VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, & WEST VIRGINIA



Two-Meter Spectrum Space...Not Much Left. What Do We Do When We Run Out Of Frequencies! ...Editor's Comment.

Also this issue...

- Rock Hill, Still Going!
- New Updated Repeater Indexes
- Complete 1984 Hamfest Calendar
- Time To Elect New Officers



HL-32V VHF AMPLIFIER — The first of our super compact amplifiers for use with handheld radios. For VHF operations, this unit produces up to 25W output with drive from your 0.5W to 3W handheld. Low insertion loss on receive and selectable power level design provide low VSWR to the transceiver.

Excellent for mobile use in snuggly fitted smaller cars, this little beauty can be stowed under the seat, out of sight and out of mind.

The HL-32V operates linear mode for SSB or FM (switch selected), and the best news of all: the price is only $89.95 Suggested Retail!

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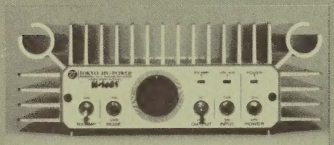

HL-160V VHF AMPLIFIER — This is our big 160W 2 meter linear amplifier which can work with a radio of 10W or even 3W output. This setup is achieved with a pair of rugged VHF R.F. transistors, using highly reliable one-board construction, and with the HL-160V's built-in 12db MOS-FET preamp.

The HL-160V has convenient front panel controls and select switches, LED indicators and a very reliable RF wattmeter. This big amp works SSB, CW, FM and AM modes, and it has a true coaxial relay on the output side.

When you need the power, the HL-160V is the power you need. $349.95 Suggested Retail.

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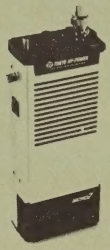


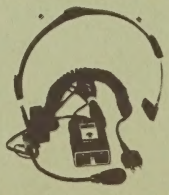
Yes, It's True!

Now there is a truly unsophisticated 3 channel crystal controlled radio to get everyone on UHF NOW. This radio is so affordable everyone should have at least two.

The low cost MICRO-7 (Model HT-7) comes with one channel of two crystals, a transmit and a receive already installed, the four drycells (AA size) needed to power the unit, an antenna and 200 mW of transmitting power.

A rather wide variety of accessories are available to boost your enjoyment and convenience such as: Speaker / mic (HSM7) (24.95) compatible with other audio systems like Kenwood and ICOM units, Subtone generator (HTE7) (19.95) set for 103.5 by a crystal, the VOX module (HVX7) (19.95) use with the boom-mic headset (HBM7) pictured below (39.95) and a rechargeable Ni-Cd battery and charger (39.95). For more output use the HL-20U THL amplifier (114.95) for up to 20 watts output.

The HT has been around for a long time but not like this. The MICRO-7 makes it time you got yourself a UHF radio and joined the evolution . . . upward.



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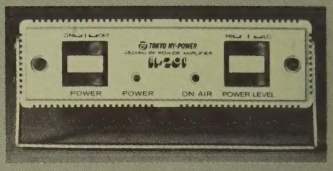

HL-20U UHF AMPLIFIER — This is another super compact from THL, and it's beautiful, with the controls on the brushed metal face panel to make operations as easy as touch and go.

The ultra-compact HL-20U is a basic amplifier for all UHF handheld radios, and it can accept input levels from 200mW to 3W, to provide a big 20W output signal. Fixed antenuator design allows for full output from as low as 200mW drive.

Your UHF handheld operations have never experienced anything like this surprising little amplifier. $119.95 Suggested Retail

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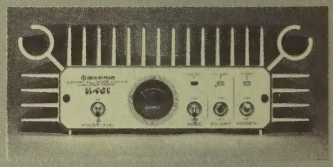

HL-90U UHF AMPLIFIER — Our new 80W output big-power UHF amp, with GAS-FET preamp and drive requirements as low as 10W, is designed for the 70cm amateur band.

It features stable and powerful amplification along with excellent linearity, which is especially effective on SSB. With its built-in receiver preamp, the HL-90U enables you to enjoy more comfortable DX QSO's. Accurate output power can be read with the built-in precision directional coupler, and power can be reduced by one half by the power level switch.

The HL-90U works FM, SSB, and CW, it provides a remote control terminal, and it comes to you for $389.95 Suggested Retail.

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REPEATER JOURNAL
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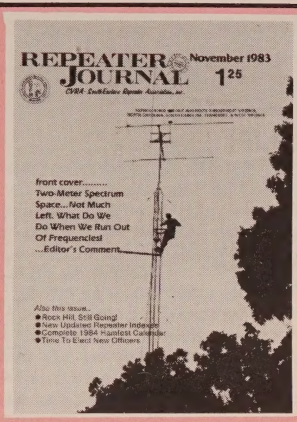
"IN OUR 12th YEAR!"



ON OUR COVER

The season has been great for antenna work. Many Amateurs have taken advantage of the dry season at Summer's end to get that new antenna system up for the Winter operation. The same went for many repeater antenna improvements. Pictured on our cover this issue is the new antenna being raised on the new 440 mHz repeater in Richmond, Va. The machine is operated by K4ARO, K40JE and N4EHJ. -Photo ctsy. Jim R. L. Fitzerald, Jr.

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Editorial Comment

—by Wayne C. Williams, K4MOB
Editor & Publisher

Foreword: Rather than chance irritation among our Directors and cause problems with our officers & membership, I will note that the views and opinions expressed in this story are solely my own, and do not necessarily reflect the total thinking of CVRA-SERA or any other organization or its membership. My credentials to write this story include: 5 years Public Information Officer, ARRL; 2 years Assistant Chairman of ARRL's VHF/UHF Repeater Advisory Committee; 2 years Vice-Director nd 2 years Director in CVRA-SERA; 6 years Editor & Publisher of Repeater Journal; operating on 2-meters since 1973; operating on 220 mhz since 1976 and operating on 440 mhz. since 1981.

Facing the Future of 2-Meters

For several years I have written casually about the crowding of 2-meter FM. Each year I have been getting a little more anxious about what we're going to do when we run out of frequencies.

In several areas of our territory we have reached that point. We are out of 2-~~meter~~ frequencies. Next year, our organization will begin its 13th year of operation. Up until now, we've had it good, plenty of frequencies, fairly uncomplicated to coordinate new ones, welcome on more 2-meter repeaters. But next year, what do we do. The problem is here and we still lack the solution.

Next year, and the years ahead, I see more 2-meter repeaters coming. They will have to be placed on adjacent channels and sometimes on same channels as repeaters already on the air. This is going to cause problems, how bad the problem will be will depend on how well we come up with some good solutions.

Existing Policies

Existing policies within CVRA-SERA tell Directors to allow at least 100 miles separation (except unusual circumstances, such as mountains, tall towers, etc.) between repeaters operating on the same frequencies. A distance of 75 miles is the general guideline for adjacent channel repeaters.

One policy that has never worked was to urge people who request a 2-meter frequency, to consider moving up to 220 mhz, or 440 mhz. From past experience, we know this doesn't work.

Quick Fix Policy

At the 1983 Winter Meeting Directors were asked to address the forthcoming problem of running out of frequencies. After an hour's discussion, 6 additional repeater channels were added by taking some existing outputs at the top of 146 mHz and giving them a 600 kHz input on 147, utilizing some odd simplex frequencies not being used.

Well this hasn't worked either. It was found that even though the inputs were 120 kHz apart, in the crowded areas, the two repeater outputs could easily be heard on a transceiver with any antenna outside, thereby causing a receive interference problem. So few of the new channels have been useful for that reason.

At this same meeting, the Board discussed future use of "PL", trying to limit additional 2-meter repeaters and educating the owners of future crowded conditions. Still no future solutions were submitted by the Directors.

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REPEATER JOURNAL

NOV - DEC - JAN

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About CVRA-SERA . . .

CVRA-Southeastern Repeater Association, Inc. is one of the largest Repeater Organizations in the United States. In our 12th year of operation, the Association is positive proof that coordination efforts have paid off in the Districts it serves. Two of our States are fifth and sixth in the Nation in numbers of Amateur repeaters. Our area is virtually interference free due to cooperation and coordination efforts of our Amateur repeater owners and CVRA-SERA over the past 11 years.

About the Repeater Journal . . .

The CVRA-SERA REPEATER JOURNAL is published quarterly, during the months of February, May, August and November of each year and mailed free to members of CVRA-Southeastern Repeater Association, Inc., a non-profit coordinating organization made up of repeater owners and users. Permission is granted for use of material contained in the REPEATER JOURNAL, provided proper credit is given. The REPEATER JOURNAL Editor will swap newsletters with other Repeater Councils and News organizations on request. The REPEATER JOURNAL press run is 4,500 copies with circulation membership in excess of 3,900 and is entered as Third Class Mail at the Post Office in Greensboro, N.C. REPEATER JOURNAL copies may also be obtained at most area hamfests for $1.25 per copy. All news and Newsletter exchanges should be mailed to the Editor and Publisher, Wayne C. Williams, K4MOB, 600 Lakedale Road, Colfax, N.C. 27235.

About Associate Membership

Repeater users and Amateurs are invited to join CVRA-SERA as Associate Members. A membership fee of $4.00 per year will enable members to support the organization and receive the "Repeater Journal". Note: Associate Membership deadlines are on the 15th of the month preceding months of publication – Jan. 15, April 15, July 15 and October 15. Persons joining or renewing their membership must have their application into the Greensboro Post Office Box by these deadlines to receive the next upcoming Repeater Journal in February, May, August and November. Memberships received after any deadline will not receive the next to be published Journal, but instead will receive the forthcoming issue the next quarter. Memberships received at hamfests will receive a current "Repeater Journal" as long as supplies are available and the next regularly scheduled issue through the mail.

About Full Repeater Membership . . .

Officers and Directors are elected from members of CVRA-SERA Full Membership. Any repeater owner or club may join our organization as a Full Member by filling out an application and submitting it with $8.00 annual membership fee. Two representatives are named for each membership and each receive the "Repeater Journal." The Full Member repeater is appropriately recognized as a full member repeater in our repeater index in the Journal. Full Memberships all expire on December 31 each calendar year.

Volunteer Examination Program Approved - Getting Underway

The FCC has approved in September, the Volunteer Examination Program for Amateur licenses. The Commission in their announcement said that 13 regional Volunteer Examination Coordinators (VEC's) will be established, as well as one each in Alaska, the Pacific islands nad the Caribbean.

According to the commission, three-person volunteer examining teams will be required for administration of the tests. All but those for the Technician Class will require that all 3 team members be Extra Class licensees.

Negotiations with groups wishing to become regional VEC's will be opened by the FCC on December 1st. Pool questions for exam use, and applications to become a regional VEC should be sent to: Secretary, FCC, 1919 M Street NW, Washington, D.C. 20554.

The following information concerning the volunteer examiner program is furnished as a courtesy of the FCC's Norfolk District Office in an attempt to answer some of the questions you may have about this new program:

Definitions: **Volunteer-examiner coordinator** (VEC). An entity which has entered into an agreement with the FCC to coordinate the efforts of volunteer examiners in preparing and administering examinations for amateur radio operator licenses.

Volunteer examiner (VE). An amateur radio operator who prepares or administers examinations to applicants for amateur radio operator licenses.

Written exam elements administered to applicants will be designed by the FCC and will be uniform throughout the U.S.

The FCC will design each written examination by choosing a limited number of questions from a pool of questions for each class of license. These pools of questions will be made available to the public. There will be no premature disclosure of the contents of any given examination. It is anticipated that as many as ten times the number of exam questions possible for any category in any class of any amateur radio operator test will be established in the pools of questions.

The FCC will retain the right to prepare and administer amateur radio operator license examinations itself, and will reserve the right to retest any person who has taken an examination under the volunteer program.

Volunteer examiners will not be permitted to charge for their services.

Exams for amateur radio operator licenses shall be administered at locations and times specified by volunteer examiners. When the FCC conducts exams for amateur radio operator licenses, they shall take place at locations and times designated by the FCC.

Volunteer examiners will make public announcement of a forthcoming examination. Field offices will also be advised 30 days in advance of any tests in areas within their jurisdictions.

The VEC will be permitted to require advance registration for examinations.

Three examiners will be required for each test session.

Volunteer examiners will be allowed to issue "instant upgrade" licenses. VEC's will issue a certificate for successful completion of an amateur radio operator examination and forward the application to the Commission's Gettysburg, PA facility.

A candidate who fails an examination element shall not apply to be examined for the same or higher exam element within thirty days of the date the examination element was failed.

The essential elements of the Novice class volunteer program which became effective August 31, 1983, will be retained. If an **unlicensed** candidate applies for an amateur radio operator license above the Novice class and passes elements 1(A) and 2 but fails the higher examination elements, the applicant will receive the Novice class license.

The Novice class volunteer examination program is already in place. We expect to phase in the program we are adopting by first implementing the use of volunteers to prepare and administer telegraphy examinations and then releasing the pool of questions we will begin to use for Element 3.

This will enable volunteers to give the telegraphy examinations for all amateur operator licenses and the written examinations for the Technician class and General class amateur radio operator licenses, after the FCC has entered into agreement with organizations to be VEC's. The pools of questions for Elements 4(a) and (b) will be issued at a later time.

Membership expirations

CVRA-SERA Full Memberships (for repeater owners) expire each calendar year on December 31. Renewal is $8.00 per year. Associate Membership, (for repeater users) is $4.00 per year, and expires one year after application is received.

Associate Membership

Check Your label! It tells you the date your Associate Membership expires. If the date is only a few months from now, why not take the application in this issue of the Journal and send it in with your membership dues of $4.00 so you won't miss a single issue of the Repeater Journal.

Remember, Associate Membership deadlines to receive the next upcoming Journal are the 15th of the month, prior to the month of publication. In other words, for the February issue, deadline is January 15; for May issue, deadline is April 15; for August issue, July 15, and for November issue, October 15. Any memberships that have expired and are not received prior to the deadline will not receive the next coming Journal that next month, but will receive a Journal the next quarter.

Where else can you get updated repeater indexes quarterly, interesting stories about your ham friends, all the equipment you could want listed under your favorite advertiser and complete hamfest listings, all for only $4.00...no where else but the Repeater Journal. So check your label....if its time, send in your application now, we don't want to lose a single one of you.

Alternatives to Noise On Your Repeater Pair

If you hear the output of another repeater, or if persons working another repeater on the same pair as yours causes key-up on your machine, there are several alternatives you might wish to consider.

Moving the other machine off the frequency is very unlikely, since there are no other frequencies for them to move to in many areas.

Some things to do: (1) Directional Antenna System, away from the other repeater, and more directly toward your desired coverage area. (2) PL tone (subaudible) where your machine will be keyed up only with proper tones being emitted from a repeater user. (3) Tone Burst, again a keyup only when users key a burst of a tone on a proper frequency which activates your repeater. (4) Ways to lower the sensitivity of your receiver by switching in RF pads in the front end or lowering the voltage on your preamp or RF amp. (5) Use your control system to change your squelch sensitivity.

Any of these things will help when properly initiated in your repeater. As the bands fill up, more repeater owners will have to look for ways of eliminating problems from nearby repeaters on the same frequency. (Ken, WA4BVW)

GREENSBOR

3rd ANNUAL Greensboro N.C.

•ARRL Sanctioned

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LOCATION:	*National Guard Armory- Franklin Blvd.*
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GRAND PRIZE:	*430 Kenwood Pre-Reg.— Icom-2AT (Sat.)*
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	$5.00 At The Door
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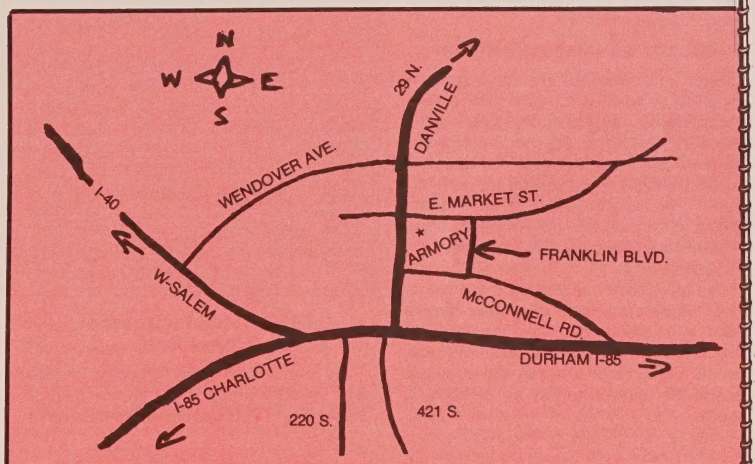

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Full Membership Renewal Time...

—by Gerry Butts, Full Mbr. Dir.

All Full Memberships of CVRA-SERA expire December 31, 1983. In order for Full members to continue receiving the Repeater Journal, and their repeater continue to be listed as a full member, all applications for 1984 membership must be in our Greensboro Post Office Box prior to January 15th, 1984.

Renewal Forms to Be Mailed

If you are a Full Member of record for 1983, you will be receiving a renewal form in the mail sometimes in late November. Both representatives of each repeater will receive an application, only one has to be returned.

A note to repeater owners or trustees. If you fill out your full membership application and name two **other** persons as full members, **you** will **not** be counted as a full member, only the two persons you named. General rule of thumb is that most clubs or owners list the trustee, or owner as one representative, and then one other person as the second representative.

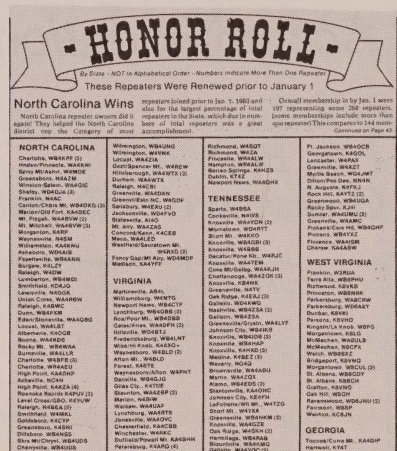
Mistakes-Mistakes-Mistakes

Each year, our Full Membership crew receives some of the most imaginative membership applications you could possibly think of: (1) An application marked "same as last year" (2) A check for $8.00??? (3) A scrap of paper with one name and address (4) An application which is unreadable (5) An application mailed to a Director, the Secretary, the President.

We have only one person, with sometimes assistance from one other person who must decipher these hundreds of applications, mark them, number them, credit them, and correct the repeater index for the computer, all in about 1 week.

Generally the correct applications which have no problems in figuring out, are sent on through. The ones with mistakes, problems, delays, or incomplete information are layed in the "will get to soon as can" basket.

We urge you to take a few moments and fill out your application accurately, and completely and mail it to only ONE place: CVRA-SERA Full Membership, Post Office Box 5655, Greensboro, N.C. 27435. Help the Full Membership committee save time, and most importantly, get your repeater listed properly.



- HONOR ROLL -

By State - NOT in Alphabetical Order - Numbers Indicate More Than One Repeater

These Repeaters Were Renewed prior to January 1

North Carolina Wins

North Carolina repeater owners did it again! They helped the North Carolina district cop the Category of most repeaters joined prior to Jan. 1, 1983 and also for the largest percentage of total repeaters in the State, which due to numbers of total repeaters was a great accomplishment.

Overall membership in by Jan. 1 were 197 representing some 256 repeaters. (some memberships include more than one repeater) This compares to 144 memb...

Continued on Page 43

NORTH CAROLINA

Charlotte, WB4KFF (2)
Hodes/Pinnacle, WA4SIH
Spruy Mt/Ashvl, W4MOE
Greensboro, WA4TM
Winston-Salem, WA4QIC
Shelby, WB4LAD
Franklin, NA4C
Carolin-Cities Mt. WB4OKS (2)
Manor/Old Fort, KA4DEC
Mt. Pisgah, WA4EVW (2)
Mt. Mitchell, WA4EVW (3)
Morganton, KA7P
Waynesville, NA5M
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Asheboro, WD8AIE
Fayetteville, WR4ARR
Burgaw, KA1ZY
Raleigh, WA2BIL
Lumberton, WB4NKH
Smithfield, NA4CW
Smithfield, NA5QUX
Union Cnty, WA4RBW
Raleigh, K4DMC
Dunn, WB4FXM
Eden/Stoneville, WA4QBG
Locust, WA4LBT
Albemarle, KA4QGR
Boone, WA4KDS
Rocky Mt, WB4WAA
Burnsville, WB4LLR
Charlotte, WB4BTJ (2)
Charlotte, WR4AEU
High Point, KA4DHP
Asheville, NC4N
High Point, KA4ZA (4)
Reenoke Rapids K4PUV (2)
Lenoir Creek/BO, K4EUW
Raleigh, NX8EA (2)
Smithfield, WA4EKL
Goldsboro, KA7P
Greenboro, KA5NC
Dillsboro, WB4NSG
Elkin Mt/Doyer, WB4UDS
Cherryville, WB4UQS
Sanford, WA4EJJ
W. Wilkesboro, WB4NRT1.
Hickory, WB4VFO
Asheville, WA2CEO
Greensboro, WA4MSR
W.S/Reynolds, WB4KDM (3)
Fayett/Ft. Bragg, WB4LPL
Fayetteville, WR6DAT
Fayetteville, NE4WQ
Charlotte, KD4CC (2)
Roaring Gap, WB4PZA
Lexington, KA1EM
Lenoir, KN4A
Raleigh, K4ITL (2)
Wilmington, WB4UNQ
Wilmington, WA1WN
Locust, WA4ZIA
Scott/Spencer Mt., WR8EW
Hillsborough, WA4WTX (2)
Durham, WA4ETM
Raleigh, NA4BI
Greensboro, KA5DAN
Greenvl/Elon NC, WA5DIF
Salisbury, WA4ZES (2)
Jacksonville, WD4FVO
Statesville, KA1ZY
Mt. Airy, WA4ZAS
Concord/Salon, KA4ESS
Maco, WA4LED
Westfield/Snowtown Mt.
WA4KAS (2)
Fancy Gap/Mt Airy, WD4MDP
Madison, KA4YFF

VIRGINIA

Martinsville, AB4L
Williamsburg, WA4TG
Newport News, WB4CTF
Lynchburg, WB4GBB (3)
Rice/Pamp, WB4GBB
Galax/Fries, WA4DFN (2)
Hillsville, WD4BTJ
Fredericksburg, WB4LNT
Wise/Mt Knob, KA4ADO
Waynesboro, WA5LD (2)
Afton Mt., WA5LD
Forest, KA5TE
Waynesboro/Afton WA2NIT
Danville, WB4GJG
Giles Cty., K4TDE
Staunton, WA4ZBP (2)
Marion, NB3W
Wartlake, WA4QAF
Lynchburg, WA4ZYS
Jonesville, WA4OVC
Chesterfield, KA4CGB
Winchester, WA4C
Fredericksburg Mt. KA9HHH
Petersburg, KA4PQ (4)
Petersburg, WA4BRJ
Dan/White Oak Mt., KA4WQS
Radford, KC4WA
Blacksburg, AB5I
Bristol, WB6CYZ
Roanoke, WB4GKB (3)
Charlottesville, WA4TTZ (3)
Chesapeake, N4SD
Lexington, WA4WBO
Galax/Bronah Mt, N4YL
Virginia Beach, WA4KXV (2)
Manassas, W1TDS
Norfolk, NE4D
Bedford, WB4JBJ
Richmond, WA5QT
Richmond, WA4ZJ
Pinnacle, WR4ALW
Pinnacle, WA4LIF
Berea Springs, KA4ZS
Dublin, KT4C
Newport News, WA6DHX

TENNESSEE

Sparta, WB5BSA
Cookeville, NA4VS
Knoxville, WA4YQC (2)
Morristown, WD4RTT
Chattanooga Mt., WA4YQC
Knoxville, WB4QSH (3)
Knoxville, WA4TEM
Cove Mt/Gatlg, WA4AJH
Chattanooga, WA4ZOR (3)
Knoxville, KB4NK
Greeneville, N4TV
Oak Ridge, KA5RJ (2)
Gallatin, WD4KMG
Nashville, WB4ZSA (2)
Gallatin, WB4ZSA
Greeneville/Groain, WA4LYP
Johnson City, WB4IHD
Knoxville, WB4IOB (2)
Knoxville, WB4HAP
Knoxville, KA4HD (3)
Madison, KA5EZ (3)
Waverly, NC4Q
Brownsville, WA4ABU
Martin, WA4ZDX
Adams, WA4ZDX
Jonesville, KA4DNC
Johnson City, KE4FH
LaFollette/Mt Mt., WA7ZQ
Short Mt. WA7XR
Greeneville, WB4HKM (3)
Knoxville, WA4CZE
Oak Ridge, WB4DIH (2)
Hermitage, WB5RAB
Bloomville, WB4KMG
Gallatin, WA4YQC (3)

SOUTH CAROLINA

Anderson/Luc, WR4AIO
Anderson, WR4AIO
Whitehall, WA8WZ
N. Augusta, K4YF
Aiken, N4AQW
Simpsonville, WA4LDP
Orrel/Cees Ho, WA4TK
Orrel/Parks, WB4VIK
Easley/Sears Mt, KJ4X
Prosperity, WB4OCB
Ft. Jackson, WB4OCB
Georgetown, KA2OL
Lancaster, WA5AJ
Greenville, WA4JJ
Greenville, WB4DHJ/MT
Union/Pea Des, KN4IH
N. Augusta, KA7KJ
Rock Hill, KA4TZ (2)
Greenwood, WB4UGA
Rocky Bayo, KJ4I
Sumter, WA4UNU (2)
Greenville, WA4MC
Florence/Cee Hd, WB4QHF
Pickens, WR4YAZ
Florence, WA4ISM
Chester, KA4AFN

WEST VIRGINIA

Franklin, W3RUA
Terra Alta, WB8PWJ
Richwood, N8YKR
Princeton, WB8AMM
Parkersburg, WA8CRW
Parkersburg, WD8AXY
Dunbar, K8VKI
Pinnacle, K8YHO
Kingston/Lk Knob, W8PG
Morgantown, K8LG
McMechen, WA8ULS
McMechen, N8CFX
Welch, WB8BXZ
Bridgeport, K8YHO
Morgantown, WB3UIL (3)
St. Albans, WB8CGDY
St. Albans, K8BCH
Grafton, K8VHO
Oak Hill, WB3CH
Ravenswood, WD8JHO (2)
Fairmont, WB3F
Weirton, NC8JN

GEORGIA

Toccoa/Corne Mt., KA4DHP
Harmon, NY4T
Augusta, WA4MIA
Athens, NA7Q
Rincon, WA1NSO
Augusta, WA4LS
Atlanta/Bell, WB2NIE
Savannah, WA1BS (2)

KENTUCKY

Black Mountain, NQ4C

ALABAMA

Birmingham, WD4BXA

1984 Repeater Journal Honor Roll

As in past years, the Repeater Journal will proudly present its "Honor Roll of Repeaters". This honor roll is made up of repeater groups who get their membership in the mail **prior** to December 31, 1983. Since the Honor Roll is published in the February Journal, any applications received after the first week of January will probably be too late to include because of deadlines in the magazine.

Non-Members- Get On List

If your repeater was not a Full Member in 1983 and you would like to join for 1984, send your name and address to Gerry Butts, 600 Lakedale Road, Colfax, N.C. 27235 and she will see that you get an application in time to join before December 31. Get your name in early so there will be no delay.

All repeaters in the area are welcome and encouraged to join the organization to help us in our work of coordinating and providing communications throughout the Southeast. Membership fee for Full Membership is only $8.00 for one year. This enables you to name two persons as Full Member repeater representatives to CVRA-SERA. Each will receive the Journal. Your repeater will be listed as a Full Member in the Journal Repeater Index. We will also use the information you provided on your application to make judgements in coordination for the coming year. Obviously our Directors can make better judgement in placing repeaters on frequencies when they have complete information about machines currently on the air.

Don't forget, deadline for Honor Roll is December 31. Deadline to be listed as a Full Member in February Journal is January 14, 1984. So when you get your application, don't lay it down somewhere, check with your other representative, and **one** of you fill out the application completely and accurately and send it back...before you forget!

Stubby *by Fred Hurteau, WD4SKH*

Hamming it up Around The Globe

—by H. B. "Brownie" Brown, W4ZZ
Greeneville, Tennessee

We had been for a long time planning to visit Australia and New Zealand when a friend pointed out that we could go all the way around for a relatively little additional out-lay. We also changed direction, deciding to head eastward to Africa first. Thus, on February 13 it was out of J F K bound for Johannesburg, R S A, with a refuel stop on D4, Cape Verde Islands, during the night. When daylight came we were over a desolate-looking ZS3 landscape but soon landed near that beautiful city. Jet lag is real but it was shaken by a good night's sleep, and the next morning, Gerald, ZS6BTD, whom I had QSO'd recently, came by and took us for a tour of the city.

He is on SSTV, both color and B & W. He recommended ZS6AF's ham store as a good place to meet some of the other hams and this proved to be correct; it was near our hotel, too.

Next day it was off to Cape Town via the famous "Blue Train", a delux hotel on rails, so famous in fact, that it has an 800-number in the U S for reservations. Aside from the service and meals the 1000-mile ride was quite scenic. Cape Town is a spectacular city on the Atlantic at the foot of 3000' Table Mountain. A Cape tour bus took us for our first view of the Indian Ocean and of the Cape of Good Hope at the southern tip of the continent. Next it was off to Port Elizabeth. This rail trip is much like the trip from Asheville down the Southern RR to Marion: lots of elevation change and sweeping curves, but for some 500 miles. A side trip was made from George to Knysna on a famous scenic branch line, a bit like the 1930's run from Johnson City to Boone on "Tweetsie": steam-powered but with much newer engines, and with a route along the Indian Ocean headlands. This is also a world-class ride for rail fans.

At Port Elizabeth some of the local hams dropped by the hotel for an eye-ball and we had a very pleasant evening.

From P. E. it was back to "Jo-burg" and thence to Victoria Falls in Zimbabwe. The only way to describe the falls is by photos: a mile wide, a 300-foot drop, and with rainbows galore. The roar must be about 75 db.!

Later, a 3-day trip to Kruger Park on the border with Mozambique took us by miles of corn fields, the first real agriculture we had seen in the R S A. In the Park it is possible to see most of the famous animals of Africa from inside your car. "Don't feed the animals" means: STAY IN YOUR CAR! Otherwise, you're liable to be the feed!

After 3 weeks in Africa it was off to Perth, Western Australia. This took us over 5R, FR8, and a refuel stop on 3B8, Mauritius. (Unfortunately, no A/M operation) At 2:30 AM local we arrived in Perth, about 11 hours after take-off. Jet lag was not so bad this time as this corresponded to only 8:00 PM back in Jo-burg--about an average day for us. At 7:00 AM a real fiscal bonanza struck: the new prime minister devalued the Australian dollar 10% which made for a fine exchange rate in our flavor. While the R S A had fine chocolate candies, there were no milkshakes. Fortunately, up-to-date Perth had a Hardees with good old US-style shakes to catch us up. Later in the week, famous DX-er Jim Rumble, VK6RU, picked us up for a day of touring Perth and environs. This included a stop at the P O to pick up approximately 25 lbs. of QSL cards, as he is VK6-QSL manager. Shack visits were made to VK6YD near our motel, who in turn took us to see VK6CF.

From Perth it was eastward on the trans-Australian R R via Kalgoorlie to Port Augusta, S. Aust., including the longest straight track in the world-- 300 miles. At P. A. VK5AQ picked us up for a visit at his shack for a fine evening. Next day we visited the Australian School of the air, their method of teaching children who live in the "out-back" far from towns on the huge stations (ranches). The teacher would ask a question, and the children would reply on their rigs. Operation was between 4500 - 6500 KHz.

In Adelaide the hamming really started. Old friend Al Smythe, VK5MF, dropped by and took us to his shack where W4UWC back in Knoxville was QSO'd. Next evening it was the same for VK5RG, and most every one I knew in the Tennessee-N. C. area got in on the act with phenominal signals. WK5MF works part time in a fine Communications Museum and has about every vacuum tube ever made except a WD-11. (I had one back in 1926; sorry, Al.) VK5RG is a fine technician and has converted a BC348 to solid state, as well as other tube jobs. He is with their "FCC".

Alice Springs in the North Territory, famous out-back city, is actually a beautiful little resort in the middle, literally, of almost no-where. It is also almost the exact center of the continent. Here, thanks to Jeff, VK8GF, another great evening of hamming was had -- the Knoxville gang along with those needing VK8.

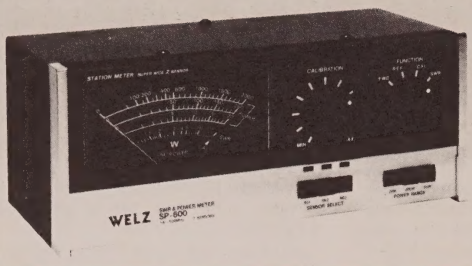
From Alice it was overland northward and then east to the Pacific coast of Queensland by bus. No more ham operating until we got to Goldburn, 120 miles west of Sydney, where Dave and Pat, VK2BDT, took care of us for 4 days on their farm. Dave had run a "Stray" in March '81 QST offering to swap room and board in VK for the same services in the States. (He hopes to be over here next year) More state-side QSOs, as well as with ZLs whom we later visited over in New Zealand. It was here that we finally got word of N. C. State's big basketball victory in the NCAA Finals - Via W4UWC.

Time was running short and so we headed for Melbourne and the over-night to their local club meeting and next day to catch a bus from a near-by town. Tasmania is much like East Tennessee - Western N. C. once you get away from the sea; the mountains look like the Smokies and get up to 5500' in elevation. Our bus took us to Hobart, the capital city, where VK7BP played host.

A flight from Hobart took us to Christchurch, N. Z., from which we took in the famous South Island coastal scenery and mountains--up to 12000' here. Then it was via rail and ferry to North Island and the hot springs and geysers near Rotorua. ZK1ANH had us out to dinner and the last QSOs from the SoPac. From Auckland we flew to Honolulu. Having left a 9:00 PM local, we crossed the International Date Line during the night, and thus had two April 25ths, one in each city. A 3-day visit with my brother, KH6AF, near Hilo wound up the hamming phase. It was on to San Francisco to visit old friends in California, and then via AMTRAK through the deep Sierra snows via Reno, Cheyenne, Denver, Omaha to Chicago. From there to Greensboro where we'd left our car, we flew, arriving back on May 5.

WELZ

SP-600



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RS-3: 130-500MHz 0-200W

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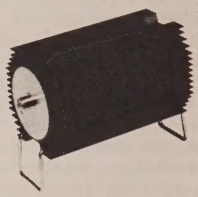
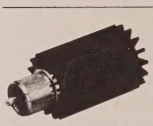


CT-150
Oil-less aircooled,
400W peak for 3 min.,
150W avg. DC-250MHz
$46.00



CT-15A
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SO-239 Screw-on dummy
DC-500MHz, VSWR<1:1.2
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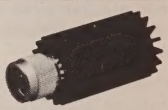

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Type N Dummy Load.
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25 watt version of
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Larger Dummy Load.
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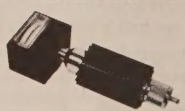

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New 440 Repeater Goes On In Richmond Area

Mark Fetty, Engineering Student and son of N4EHJ secures heliax feedline to the tower for the new Richmond 440 repeater antenna. The antenna is the highest one showing on the tower. Photo ctsy: K4OJE, Jim Fitzgerald.

70 cm comes to Richmond. On Saturday, August 20th, at 10:56 (AM). Richmonds only 70 cm repeater commenced operation on the coordinated frequency of 449.500 In and 444.500 Out.

The repeater is a GE Mster Pro II together with a Motorola Duplexer and runs 55 watts E.R.P. from 385 feet A.M.S.L., call K4ARO/R.

It covers Richmond, Ashland, Petersburg and Hopewell including Kings Dominion and the counties of Chesterfield, Henrico, Hanover, Louisa, Caroline and most of Goochland and provides good mobile coverage for most of this area.

The repeater is located near the I-295 Beltway in Richmond's northern suburb and provides good HT coverage in much of the populous West End and Ashland areas.

Additional improvements and refinements, including emergency power, is planned for the future. Full insurance coverage has been provided.

The repeater is a full member of C.V.R.A.-SE. It is privately owned and operated as an open repeater by K4ARO, K4OJE and N4EHJ.

Tennessee Vice-Director, Tom Park, had CVRA-SERA booths at two recent 'fests. At the Nashville Hamfest, in his hometown, Tom was able to sign-up several new members both full and associate. He also received a few complaints but an equal number of thank-yous for his efforts to reorganize the co-ordination process in middle Tennessee. We welcome two large repeater groups as new full members WA4PCD and Nashville Repeater Association. Tom also attended the Louisville, Kentucky 'fest to spread the word about CVRA-SERA. He found and met with many interested hams and several repeater owners that wanted to join our ranks. There is no co-ordination effort at all in Kentucky. CVRA-SERA is badly needed there. Tom has several definate maybe's from advertisers that he met at the recent 'fests. He sends a special thanks to WA4ZXT and WB4AGO for their help in Louisville.

• • •

The WA4GZE/R in Knoxville has had some notable changes resulting in increased range. The addition of a Wacom WP-641 duplexer in favor of split antennas and a hustler G7 antenna with ½" hardline has certainly perked up this 77/37 subband machine.

• • •

We have a co-ordination request from Laffoliate for a new two-meter machine but no details yet.

• • •

Tennessee and CVRA-SERA efforts here are finally getting the respect due from our neighboring non-CVRA states. We have regular co-ordination correspondance coming in from Missouri and Alabama. We have even had one request from the Southern Illinois VHF-UHF Repeater Association.

Tennessee Tidbits

—by Sam Kirby WB4HAP

• • •

Tim "Phelps-Dodge" Berry is at it again. He finally got his WB4GBI 449.7/444.7 repeater on-the-air from View Park Hill in South Knoxville. The antenna bolts haven't even started rusting yet and he's asking for a 6 meter frequency pair. Tim also operates 2 two-meter repeaters in the Knoxville area. The reason I say **Knoxville Area** is that one never knows where they will be from one week to the next. I wish I had that much energy. I do know a certain gal of the nickname E.T. That just might slow Tim down a whole lot in the near future. Oh, by-the-way, the new UHF machine has two users -- Tim and his scanner.

• • •

The 222.86/224.46 WA4YON/R on Cross Mountain near Oakridge now has a UHF radio linked autopatch into the Anderson County exchange. This exchange covers Clinton and Oakridge. This same machine also offers 10 meter F.M. Remote base capabilities with a selection of 4 - 10 meter frequencies. The machine and all it's functions are open to any user. Contact Gene Price, WA4YON, for control codes and operational procedures.

• • •

The Radio Amateur Club of Knoxville (RACK) should have their new 220 machine on-line by the time this goes to print. The DB-244 antenna and feedline have already been installed and the Wacom duplexer has arrived. The Spectrum repeater is due soon. The 222.90/224.50 machine is to have emergency power and will join the 147.90/147.30 machine at 2900 FTAMSL on Chilhowee Mountain.

• • •

You might have been looking for the 449.65/444.65 machine at Greeneville lately. It's off the air temporarily while being readied for a new location. It will be located on the same mountain (Viking) but at a different site. Some upgrading is being done in the interval including a new transmitter, duplexer and antenna. The WB4NKM repeater covers East Tennessee like the den from it's 5000' vantage point.

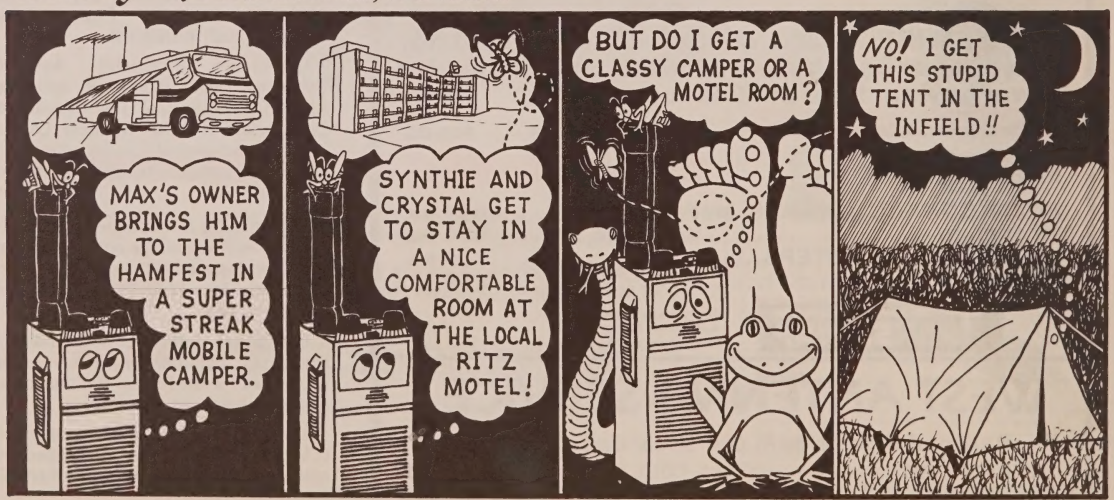
Two Winston-Salem CAP Cadets Earn FCC Licenses

Mark Byerly and Daryl Shaw, both of the Winston-Salem (NC) Civil Air Patrol Squadron/Aviation Explorer Post 82, have earned or up-graded amateur radio licenses. Byerly, (KB4DJD) 15 and in 10th grade at Hill High School, upgraded his novice "ticket" to technician at Greensboro in September.

Shaw (KB4GVU), 16 and in the 10th Grade at Kerwin Christian School, earned his first amateur radio license--novice. His volunteer examiner was Wayne Byerly (N4BOJ), the Squadron's communications officer.

Fourteen Winston-Salem CAP members now hold amateur licenses--of these, five are cadets. The squadron members frequently use amateur frequencies for routine and emergency communications when CAP frequencies are not available or inconvenient. CAP works closely with ARES in Winston-Salem.

Stubby *by Fred Hurteau, WD4SKH*


MAX'S OWNER BRINGS HIM TO THE HAMFEST IN A SUPER STREAK MOBILE CAMPER.
SYNTHIE AND CRYSTAL GET TO STAY IN A NICE COMFORTABLE ROOM AT THE LOCAL RITZ MOTEL!
BUT DO I GET A CLASSY CAMPER OR A MOTEL ROOM?
NO! I GET THIS STUPID TENT IN THE INFIELD!!

Thanks From Galax

- by Junior, N4VL, Galax

(Editor's Note: Through an unusual happenstance, three repeaters on the same frequency in three states were coordinated with no special problems anticipated. Not was the case, when coverage of one went far beyond expectations.)

My thanks to the trustee, Bennie Peterson, WB4SQC for agreeing to change frequencies on the Johnson City, Tennessee repeater from 53-13 to 57-17 in the sub band. Also to trustee Clyde Marshall WD8KOY for changing the Bee Mountain, West Virginia machiine to 55-15 sub band and providing a clear frequency for the Point Lookout Mountain 53-13 machine near Galax, Virginia. (See August Repeater Journal, Page 16)

Both of you are very cooperative gentlemen and are fine examples of the spirit which should exist between Amateur radio operators.

Thanks also to Assistant CVRA-SERA Directors Lee McDaniel, WB4QOJ from Virginia, Alan Campbell AE4V, Tennessee and Karl Morris, WB8GDY of West Virginia for their cooperation in coordinating and assisting in this change over.

We thank all of you...Gentlemen!

Wanted! Repeater Pairs Not Being Used

There are many coordinations still hanging where a person planned a repeater but just hasn't gotten around to getting it on yet. Many of these coordinations are not published in the Journal.

Persons who do not plan to use a frequency they have coordinated should notify their State Director and relinquish the frequency so it will be available for later coordination.

Anyone noticing a repeater listed in the Journal, and cannot find a machine on that frequency are asked to notify the Journal Editor as soon as possible, or your State Director.

With frequency pairs at a premium, we need to be aware of pairs not in use. All repeater users are asked to check around, see that all repeaters listed in the journal that should be on the air, are and in proper operating condition. (Repeaters marked "C" or "P" may or may not be on air at this time)

PATRONIZE OUR ADVERTISERS IN THE REPEATER JOURNAL

NC QSO Party Sked This Weekend

The 1983 North Carolina QSO party will be held this weekend from 1700z Saturday through 2359Z Sunday.

FREQUENCIES: (Phone) 28.580, 21.380, 14.280, 7.280, 3.980 mHz. (CW) 60 kHz up from the lower band edge. (Novice) 20 kHz. up from band edge.

EXCHANGE: North Carolina stations give signal report and county, non-North Carolina, give signal report and ARRL section. Work mobile stations as they change counties. N. C. stations may work each other for point credit only.

SCORING: N.C. stations count one point per QSO and multiply by number of N.C. counties worked. (Max. 100) Add 25 points to final score for working club station K4EG.

AWARDS: Highest score from in and out of state will receive a set of 1984 callbooks. High score in each ARRL section will receive certificate.

LOGS: Mail logs to F.R. Ashley, WB4M, Route 1, Box 471, Mebane, N.C. 27302. Logs must be received by December 16, 1983. Send large SASE for results.

MarVista Motel

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Tel. 803/272-5125

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OCEAN DRIVE SECTION
NORTH MYRTLE BEACH, S.C. 29582

NORTH MYRTLE BEACH
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OUR CLUB REPEATER
147.63 147.03
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WA4RIR

HOLIDAY

Ken Holiday
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STS-9 Amateur In Space Delayed Til Late Nov.

—Excerps from W5YI & Westlink Reports

(Editor's note) The STS-9 space flight with Dr. Owen Garriott, W5LFL was originally scheduled for October 28. Due to malfunctions in the rocket the launch has tentatively (at press time) been scheduled for November 27 or 28th. If this launch is not possible, the mission will be scrubbed until February, 1984. We present to information to help you get an idea of what to expect when the launch does occur.

Dr. Owen Garriott, W5LFL will be conducting the first Amateur experiments in space. Scheduled are "off times" when Garriott is free to attempt making contacts with amateurs back on earth. Although no one will actually be able to converse with Dr. Garriott, he WILL acknowledge your call sign, if he hears you.

Originally Owen planned to first operate from space as Orbits 39 and 40 passed over the U.S., but they had to be cancelled since they conflicted with his mission schedule. It also means that amateurs in the pacific northwest and much of the mid-western part of the nation will not get an opportunity to contact the spacecraft. On the bright side, most of us on the East, South and mid-U.S. will get a shot at it.

Here are the plans that Dr. Garriott said he will be operating under: (1) He will transmit on 145.55 mHz, with 145.53 or 145.57 mHz as backup. (2) He will listen ONLY to 144.91, 144.93, 144.95, 144.97, 144.99, 145.01, 145.03, 145.05, 145.07 and 145.09 mHz. (Please note that Garriott will not be using 145.25 mHz as a backup transmit frequency and he will only be using ten of the twenty originally announced receive channels.)

(3) W4LFL will start transmitting for the 60 seconds of each EVEN minute and will scan the 10 receive channels for the 60 seconds of each ODD minute. (It is an absolute must that you synchronize your clock to WWV.)

(4) When calling, simply say "Columbia/W5LFL (once or twice) followed by your call sign several times." Garriott will not carry on any conversations and will merely acknowledge your call sign, if he copies it.

A massive ham-in-space last minute news dissemination network has been established, for you to check W1AW, W5RRR, for late breaking news or changes in operating times. W5RRR (the Johnson Center ARC) plans to operate during the seven day mission to five different HF amateur bands – 28.6, 21.37, 14.28, 7.23 and 3.85 mHz.

The ARRL has installed a special space operation phone line: (203) 666-0688 for late operating information. West coast updates can be had from the Westlink/Hollywood newsline at (213) 465-5550. SANA (the Scanner Association for North America) even has a toll free news number that you can call at: 1-800-SCANNER.

Anyone making a 2-way contact or simply receiving amateur radio communications from the Columbia is eligible to receive a unique confirming QSL. The ARRL is acting as QSL manager and all confirmations will be sent from League headquarters. Garriott will have a small tape recorder tied to his transceiver and will turn the tape over to the ARRL.

The QSL's will be mailed once they have reviewed the written log and audio tape to see if your call sign is included. Two different card designs are being developed by the League and the JSC Amateur Radio Club, Houston – one for 2-way communications and another for SWL's.

Range of Transmissions

According to Chuck Biggs, KC5RG of the Johnson Space Center the range of Owen Garriott's ham transmissions has been estimated from 1200 miles on down. He said Dr. Garriott felt that 400 miles from either side of the ground track would be in range. He is hopeful of an 800 mile "footprint". He said that several thousand graphic maps are made up showing the locations and times of the orbits. A copy can be had by sending a SASE to: NASA; Lyndon B. Johnson Space Center; Office of Public Affairs; Houston, Tx. 77058.

Late November Launch

At press time, we understand the STS-9 mission launch will take place on November 27 or 28th with the understanding that a delay from this launch time will scrub the mission until February of next year.

We have to assume that the news dissemination networks will be continued through launch time, which will be an excellent source of orbital data and times after the actual launch.

Continued on Page 43

Nominating Committee Fails To Get Report Of Nominations In

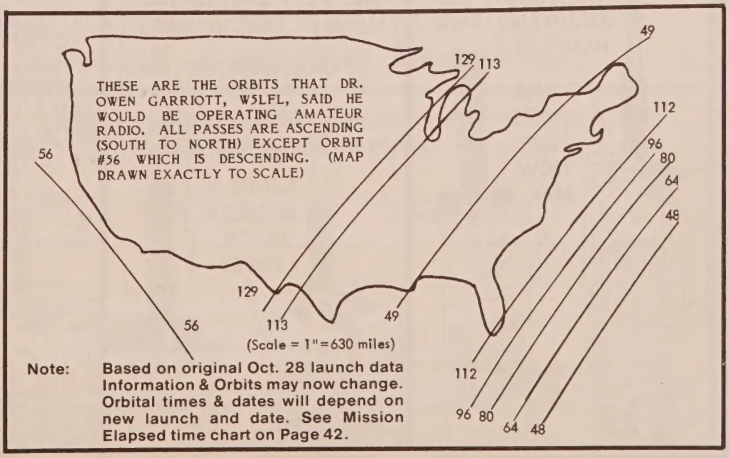
The Repeater Journal was unable at press time to get a complete report from the nominating committee, charged with the responsibility of nominating new officers for CVRA-SERA.

A late telephone call to Carter Cogle, VP, indicated that he had been nominated for President, Jim Fitzgerald, K40JE of Richmond, Va. had been listed for Vice-President, and Ray Adams, N4BAQ of Knoxville, Tn., nominated for a second term.

We apologize to our readers. The committee was asked at the September 6th meeting at Shelby to get the full slate ready in time for the October 1, deadline of the Journal, as prescribed by CVRA-SERA By-Laws. They did not.

We remind you of your privilege as a Full Member of CVRA-SERA of sending in your own nomination for any person who agrees and you feel would be well suited for the job as one of the organization's officers. In this issue of the Journal is a nomination form for you to use for that purpose.

It seems, since no one is officially nominated according to the By-Laws, the field is wide open, and you Full Members have your chance to take things in hand and provide nominations you feel will do the job properly. (The editor)


THESE ARE THE ORBITS THAT DR. OWEN GARRIOTT, W5LFL, SAID HE WOULD BE OPERATING AMATEUR RADIO. ALL PASSES ARE ASCENDING (SOUTH TO NORTH) EXCEPT ORBIT #56 WHICH IS DESCENDING. (MAP DRAWN EXACTLY TO SCALE)
49
129
113
112
96
80
64
48
56
(Scale = 1"=630 miles)
Note: Based on original Oct. 28 launch data Information & Orbits may now change. Orbital times & dates will depend on new launch and date. See Mission Elapsed time chart on Page 42.

WEST VIRGINIA NOTES

By: Ted Wolfe, WD4KHL

This was written in mid-September, just after the break in the weather from the long, hot and humid days of late August and early September. Remember, in order to get this copy to the Editor in time for inclusion in the November issue, I have to get it to him before the first of October.

• • •

And that reminds me to note that this issue is the fourth since the **Journal** began the new size format with the February issue. A full year's worth of this quarterly publication has now gone out in the new 8 and 1/2 by 11-inch size. Apparently the new size has been well received by the Associate Membership.

• • •

If all goes well, by the time this reaches you the Amateur Radio in Space effort by Dr. Owen Garriott, W5LFL, aboard the Space Shuttle mission STS-9, will be History, So, any wrap up on that story, whichever way it goes, will have to wait till the Feb. 1984 issue.

• • •

Jeff Clark, N8DTN, Charleston, left WCAW radio in September to accept a job as Production Manager for an FM station in Columbia, SC. I did have a note with the Columbia station's call letters on it, but--as usual--I've misplaced it and can't find it as I write this. Jeff was quite active in ham circles in Charleston and was a frequent Net Control Station for the weekly Kanawha ARC net on the 146.88 machine on Sunday nights.

Charleston's loss is Columbia's gain.

• • •

Two repeaters operated by the Appalachian Repeater Association in the Beckley area will be moving to new sites soon. There will be no change in the listings since the moves are only for short distances to take advantage of new towers and higher antenna mounting locations. The repeaters involved are Bolt Mtn 144.57/145.17 and Layland/Mann Mtn 144.71/145.31.

• • •

The Putnam (County) Amateur Radio Association has purchased a new General Electric Master II repeater to replace the old K8SLI Scott Depot 147.87/147.27 machine. According to club members the investment in new gear is about $5,000. And the antenna is being moved to a new tower recently erected by and for Putnam County Emergency Services. The new tower is 1150-feet above sea level. ERP will run about 100 watts. The repeater will still have autopatch, although at this time it is uncertain which exchange prefix will be assigned by the telephone company. By the time this is printed all the new equipment should be operational from the new site.

• • •

After being off the air for more than a year while sponsors sought a new site, the Logan 146.37/146.97 repeater was finally reactivated Field Day weekend this summer from Ward Rock Mtn overlooking Logan. The new call on the machine is WD8DRV.

But a month later a person or persons unknown used bolt cutters to gain entrance to the repeater building and proceeded to wreck the machine. Members of the Logan ARC, undaunted by misfortune, plan to get it back on as soon as possible. They also plan a sturdier, more secure, building. With the above in mind, this might be a good time to suggest that where possible repeater owners consider some sort of intrusion alarm at the transmitter site so the repeater itself can give the alarm when unauthorized persons gain access to the repeater site.

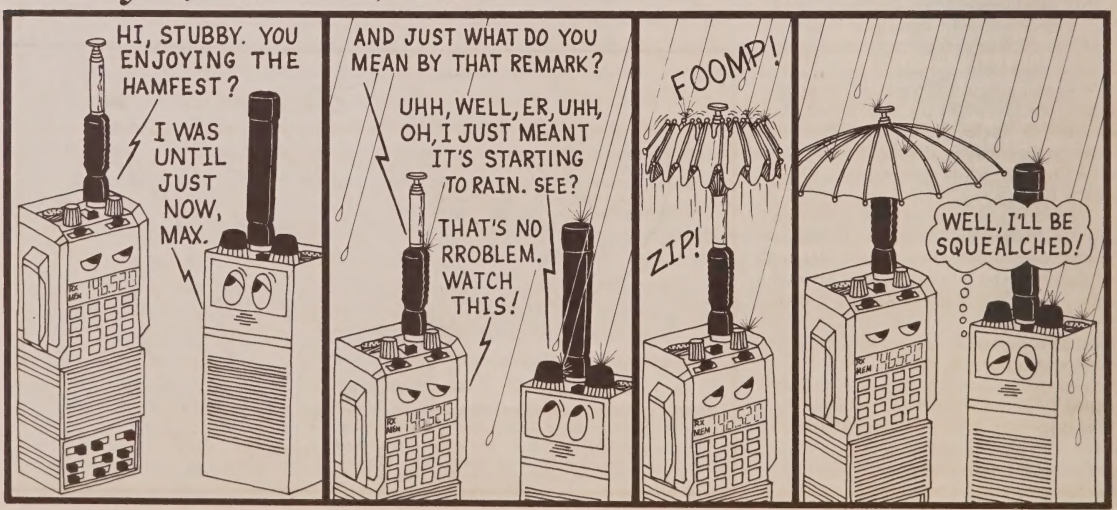
• • •

A few changes to note: The call for the Jumping Branch 146.355/146.955 repeater has been changed. It was formerly listed as K8BUX. It should now read WD80GY; the Call on the 144.77/145.37 machine at the Emergency Operations Center in Beckley is KC8FW, not WD8POF; and the 144.145.15 Bee Mtn repeater's call has been changed from WA8YOF to N8DBN.

• • •

The deadline for repeater owners to register their machines with the ARRL for inclusion in the 1984 Repeater Directory was Nov. 1. But if you didn't send in one, I will be sending a computer printout to ARRL listing all the amateur repeaters in West Virginia that we know about. So, if you're listed by CVRA/SERA in the **Journal**, ARRL will still know about your machine, courtesy of your State Director and his frequency coordinating assistants, WB8GDY and K8LG.

Stubby *by Fred Hurteau, WD4SKH*


HI, STUBBY. YOU ENJOYING THE HAMFEST?
I WAS UNTIL JUST NOW, MAX.
AND JUST WHAT DO YOU MEAN BY THAT REMARK?
UHH, WELL, ER, UHH, OH, I JUST MEANT IT'S STARTING TO RAIN. SEE?
THAT'S NO RROBLEM. WATCH THIS!
FOOMP!
ZIP!
WELL, I'LL BE SQUEALCHED!

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Nov. 26-27

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Hurry, You have only a short while to get your application in the mail!
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HOWEVER

If the winning person drawn IS present at the Greensboro Hamfest, he or she will ALSO win in addition to the Commodore 64, the matching Commodore C2N interfaced Cassette Recorder.

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Commodore Computer

All mailed entries must be in our hands by November 25.
You may also register at the Greensboro hamfest.

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Name_____ Call _____

Address _____

City_____ State_____ Zip_____

Telephone number ( ) _____

Clip and complete this form and mail to:

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Greensboro, N.C. 27407

Or

Williams Radio Sales
600 Lakedale Road
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No Purchase is Necessary - You do not have to be Present to Win.

York County Had Early Start As Radio Club

A REPEATER JOURNAL SPECIAL SECTION

Some say Organized in 1947...Others Say 1948

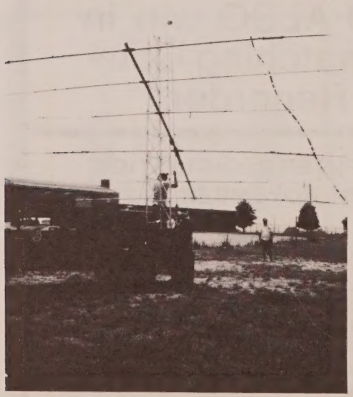
—Adapted from Material Supplied by Phillip Loss, WA4QQG and from Historical records by Glenn Adkins

"It was hot as a two-dollar frying pan", wrote Glen Adkins in his revised history of the York County Amateur Radio Society (Rock Hill, S.C.), but there were fifteen hams who came to our organizational meeting in the Summer of 1948. Ten joined as charter members and organized the York County ARS. The first meeting was held at the rear of the old City Hall which at the time was used as a country market and formerly the City Jail.

Peter Krenn of the York County ARS in an undated picture demonstrates the use of Amateur Radio with equipment the club donated to the local Red Cross as Mary Lodge, Red Vross Chapter Director looks on. (Photo ctsy Evening Herald, Rock Hill, S.C.)

Adkins said he remembers vividly Dorth Fall, W4NTD passing out cards and saying "put your name, address, and call on it." No one had a call but Morris Hall, John Thompson and Dorth.

First records of the club were lost in a church building where classes were held. A janitor accidentally burned them in 1956. Adkins re-wrote most of the history from memory. Some of his sources said the club was organized in 1947, others agreed with him...1948. Origin of just who conceived the club is not known, but it was suggested that Morris Hall, W4OE had something to do with early plans. Several pre-organizational meetings were held at Joe Brown's shack, which was a renovated chicken house. Brown, W4ONJ and others had placed an announcement in the local Rock Hill paper informing the public that there would be a meeting to organize an Amateur Radio Club that July of 1948.



Antennas Away! Members of the York County ARS raise a "monster" of a beam, clear evidence they mean business when they participate in Field Day. Top Scorer in the Roanoke Division the past 3 years. Yep, they mean business!

Nobody said it was going to be easy at Field Day. Sometimes the wind just doesn't cooperate as members of the York County ARS found out at a recent field day exercise.

First officers of the York County club were: Morris Hall, Pres.; John Thompason, VP; Dorth Fall, Sec.-Treas.; Ralph Budding, Custodian of property. Charter members signed up that night included: Joe Brown, Glenn Atkins, Raymond (Sparky) Adams, Webb N. White, Lee Roy Boatwright, and Charles Thomas.

The only requirements to join the club was a genuine interest in Amateur Radio and five bucks, and 50-cents dues a month, or six dollars a year.

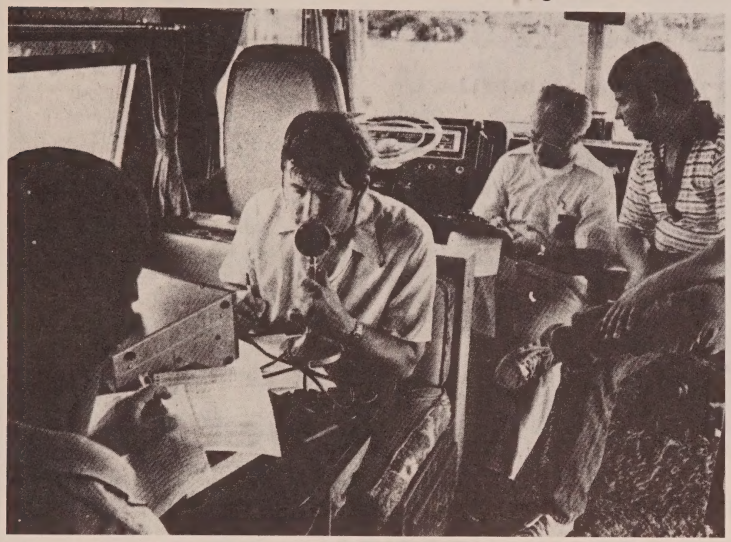
The club was chartered August 10, 194[illegible]. Over the years, code classes were conducted, many new hams brought into the fold. The club station isK4YTZ, with Carleton Kimsey, K4YFK as trustee.

Activities of the club include field day operation, (Roanoke Division champs for past 3 years), participate in the South Carolina Sky Warn system, Support of the local Red Cross, Provide emergency communications for three local

Continued on next page

6-elements in the sky for the Rock Hill Field Day, conducted by the York County ARS. A neat idea, put your beam in a bucket and raise it 50 feet...easily.

York County Had Early Start



The York County ARS is very active in Field Day operations, coming out on top for the past three years in the Roanoke Division. This 1977 photo appeared with story in the Rock Hill Evening Herald. At the microphone was Bill Little, club Secretary-treasurer as other club members log and explain the operation to visitors.

Continued from Page 16

marathon foot races, nets weekdays on the 43-03 repeater and an annual hamfest.

Repeater Started in 1972

The local club repeater was planned in 1971, but it took four long years to finally get it on the air. Finally June 3, 1975, the WR4AJO machine carried its first QSO. The machine, bought from the Shelby Radio Club, was installed in the transmitter house at the city water tank on West Main Street in Rock Hill. Carlton Kimsey, K4YFK is trustee for the 43-03 repeater as well as the club station.

Club Roll Today

The York County Club has about 45 members on its rolls today. Adkins estimates the club has had over 125 members in and out of the club in the past 25 years. Today's membership carries on the original idea formed on that hot night in 1948. To have fun, teach Amateur Radio, and lend a hand at public service. Adkins summed the success of the York Club in one sentence..."We have stuck together thru thick and thin all these years without any quarreling or fussing, simply because everyone tried, but most of all, it was a plain case of Want To!".

32nd Annual Hamfest

The York County ARS just held their

Continued on Page 19

We weren't sure whether the tent was for shade or protection in case it rained. Usually the October sun feels good at the Rock Hill Hamfest, but some people are just bound to get fancy!

Dealers, flea marketeers and tailgaters line up together at the Rock Hill Hamfest. The 32nd annual event was held last month, providing a place for hundreds of area hams to meet, swap, sell and buy.

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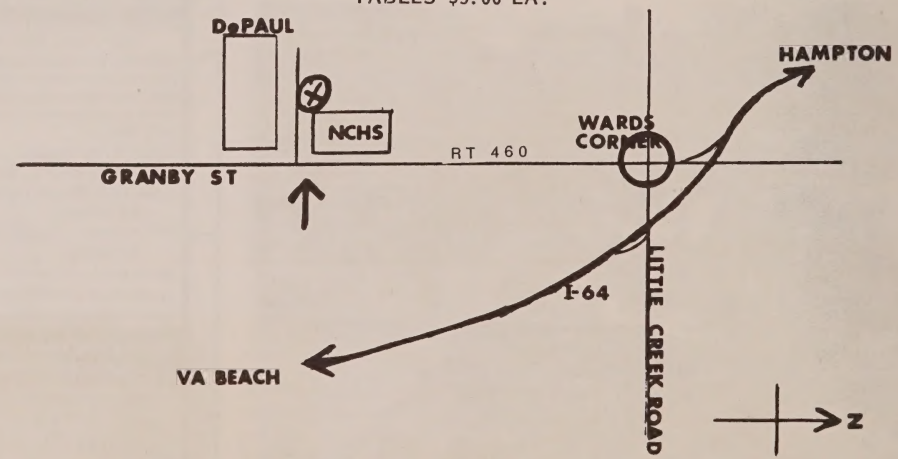

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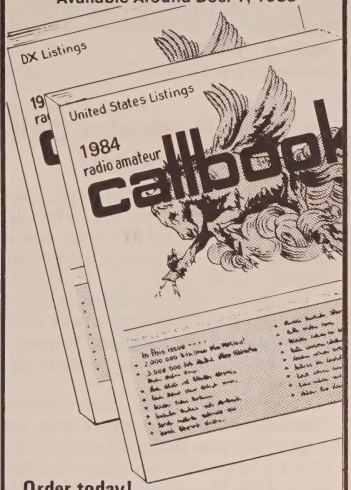

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The QCWA booth at the Rock Hill Hamfest provides a place for "old timers" to stop by and chat. Nice places to sit and talk, or just gaze at Lake Wylie are two attractive features of the hamfest.

Continued from Page 17

32nd Annual hamfest this past month. As in the past, it is always held on a crisp October Sunday morning next to beautiful Lake Wylie at Joslin Park (near Rock Hill).

Some years...it gets cold! Most years, its just nippy in the morning, and warms up to a bright Autumn day. A large green field is filled with hundreds of cars, tailgaters, people and campers. Tables, chairs, blankets are filled with equipment as hams enjoy the outdoors of the dying breed of outdoor hamfests.

Lunch is always served and always includes fried or bar-be-cue chicken, potato salad and all the tirmmings.

The Rock Hill Hamfest is not necessarily a growing hamfest, it has been for years a good medium sized event, no fancy frills, just a nice park to bring the family and meet your ham friends and do a little horse trading.

The York County ARS is an "old" club in the sense of how long it has been around, but it's a young club as far as participation and activities among its members.

As one club member said, "It's hard to fuss or fight and be apathetic when you're having so much fun with your friends."

Full Memberships To Expire December 31

All repeater owners and club repeater owners are reminded that all Repeater Full Memberships expire December 31. All 1983 members will receive renewal forms in the mail sometimes later this month. When you get it, fill it out, and send it in before December 31 to be listed in the February Journal Repeater Honor Roll.

Repeater owners who were not Full Members in 1983 can receive an application to join by sending their name, call and address to REPEATER MEMBERSHIP, P.O. Box 5655, Greensboro, N.C. 27435. Get it in before Nov. 10, and we'll include your application in our bulk renewal mailing the last of November.

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Whiteville Repeater Goes Atop Columbus County Hospital

—by Fred Horteau WD4SKH

When the Columbus County Amateur Radio Society, Inc. was chartered in June of 1982, the first order of business was to locate a repeater and then find a good place to put it. The first objective was accomplished within a few weeks. The C.C.A.R.S. agreed to purchase the old Wilmington .22/82 machine which had been taken out of service some time earlier (when the .22/.82 antennas and the Channel 3, WWAY TV tower were lowered to ground level by an airplane). During the following year Jerry Tate, K4GMP, of the Wilmington VHF Association changed over the repeater to 147.81/.21 for the C.C.A.R.S.

The hard part turned out to be finding a suitable site for the repeater. The only TALL tower in the area was the local cable company site. However, the cable company was not interested in our proposal. That left one water tower, an abandoned 100 foot Rohn 25G tower, downtown, which was of questionable ownership, and the Columbus County Hospital, which was the tallest building in the area.

After several months of negotiations and preparation, the C.C.A.R.S. received approval from the Columbus County Hospital Board of Directors to place the repeater in the elevator penthouse and the antenna on the roof. The advantages of operating at the hospital include emergency power from hospital generators in the event of a power outage. This one element alone will greatly facilitate the clubs ability to provide communications in an emergency.

The 147.81/.21 repeater is a GE Progress Line, circa 1967, operating at a nominal 15 watts. About 80 feet of RG-8 runs outside to a Cushcraft antenna (4 phased dipoles) at 110 feet. The repeater presently still has a 3-minute timer with reset on carrier dropout, but a two-tone beep timer with reset on input carrier dropout has been constructed but not yet installed.

The Whiteville repeater is an open repeater, and everyone is cordially invited to visit us. Coverage is expected to be 20 miles on mobile and 50 miles or better on base antennas. This will provide long-needed local coverage in the "twilight zone" between Lumberton, Wilmington and Myrtle Beach. A lot of "beach traffic" is expected on this repeater. If you're headed for any of the Carolina's beaches, or Lake Waccamaw, or just passing through otherwise, give a call on 147.81/.21. The following members will be listening: K4MSD, W4NTQ, WD4ECC, N4BGU, WD4SKH, K4JEX, W4EXJ, WD4PAN, K4HZR, KA4TTT, KF4HI, W4RHU and WA4DNK.

The C.C.A.R.S. holds a club meeting the second Tuesday of each month at 7:30 p.m. and currently being held at the home of W4NTQ in Whiteville. All amateurs are eligible for membership without restrictions, and all area amateurs are cordially invited to attend.

Is Your Repeater Call Correctly Listed?

Ken Woodard, WA4BVW, N.C. Director reminds that all WR4 calls should have expired by now, but we notice several still listed in the Repeater Journal index.

Repeater owners are urged to look up their listing and correct the calls if they are wrong for the February Journal, so you won't have an illegal call published.

Unfortunately all incorrect calls from this issue will be listed as such in the 1984 ARRL Repeater Directory since CVRA-SERA and the Repeater Journal send a copy of our November updated printout to ARRL each year, for them to update our 5-State coverage area.

JOIN ARRL

BENEFITS FOR YOU: QST, QSL Bureau, Awards (DXCC, WAS, etc.), Low Cost Insurance, Operating Aids, Government Liaison and more—Much more! For You!

USE THIS COUPON OR A FACSIMILE AND MAIL TODAY.

The American Radio Relay League, Inc.

GAY E. MILIUS, JR., W4UG
DIRECTOR, ROANOKE DIVISION
AMERICAN RADIO RELAY LEAGUE
1416 RUTLAND DR.
VIRGINIA BEACH, VA. 23454

MEMBERSHIP APPLICATION **PRO/83**

Name _____ Call _____
Street _____
City _____ Prov./State _____ PC/Zip _____

$25 in U.S./$30 in Canada/$33 elsewhere (U.S. funds)
Licensed amateurs, age 17 or under or age 65 or over, upon submitting proof of age, may request the special dues rate of $20 in the U.S. ($25 in Canada, $28 elsewhere, in U.S. funds)
For postal purposes, fifty percent of dues is allocated to QST, the balance for membership.

VISA or Chargex No. _____ Expires _____
Master Card No. _____ Bank No. _____ Expires _____

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DISTRIBUTION OF REPEATERS BY FREQUENCY

The By-City Index Appears On Following Pages

2-METERS

5.33 /PKET	MEMPHIS	TN
6.50 /2.525	CLARKSBURG	WV
4.51 /5.11	DECATUR*	GA
	MILLEDGEVILLE	GA
	HIGH POINT	NC
	KNOXVILLE	TN
4.53 /5.13	NEWNAN*	GA
	AHOSKIE	NC
	HODGES/GREENWOOD	SC
	CHATTANOOGA-RTTY	TN
	GALAX	VA
4.55 /5.15	ATLANTA/GA TECH*	GA
	CHRYVL/BKRS MT	NC
	MAYODAN	NC
	DECATUR-PONE KB	TN
	FRANKLIN	TN
	MARMET/BEE MT	WV
4.57 /5.17	HAMPTON	GA
	JONESBORO	GA
	CHARLOTTE	NC
	OXFORD	NC
	JOHNSON CITY	TN
	LOUDON	TN
	SMYRNA	TN
	BOLT MT	WV
4.59 /5.19	PIKEVILLE	EKY
	HAMILTON	GA
	MT MITCHELL	NC
	JASPER	TN
	WHEELING	WV
4.61 /5.21	RIVERDALE	GA
	SMYRNA	GA
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	GASTON	SC
	KNOXVILLE	TN
4.63 /5.23	ASHBURN	GA
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	SAVANNAH	GA
	CHARLOTTE	NC
	MCMINNVILLE	TN
	MIDDLEBRO(KY/TN)	TN
	LOGAN	WV
4.65 /5.25	DALTON*	GA
	FOREST PARK	GA
	GREENSBORO	NC
	FISHERVILLE	TN
	GREENEVILLE	TN
	NASHVILLE	TN
4.67 /5.27	CANTON	GA
	HENDSVL/PINCK MT	NC
	RALEIGH	NC
	MANASSAS	VA
	PIE HORSE MT	WV
4.69 /5.29	PRESTONSBURG	EKY
	ATLANTA	GA
	CLEVELAND	GA
	CHARLOTTE	NC
	BRISTOL	TN
4.71 /5.31	ATLANTA	GA
	ROCK HILL	SC
	ATHENS	TN
	LAYLAND/MANN MT	WV
4.73 /5.33	JONESBORO	GA
	MT AIRY/FANCY GP	NC
	BAMBERG	SC
	CHATTANOOGA	TN
	KNOXVILLE	TN
	PARSONS	WV
4.75 /5.35	SANDY SPRINGS	GA
	CANTON/CHBRS MT	NC
	CHARLOTTE	NC
	GREENVILLE	NC
	NASHVILLE	TN
	BLAND	VA
	FALLS CHURCH	VA
4.77 /5.37	HAMILTON-RTTY	GA
	N. WILKESBORO	NC
	KNOXVILLE	TN
	BECKLEY	WV
4.79 /5.39	GRAYSON	EKY
	GRIFFIN*	GA
	WIN-SAL/SAUTN MT	NC
	CHATTANOOGA	TN
	MT. JULIET	TN
	STANTONVILLE	TN
4.81 /5.41	ATLANTA/BELL*	GA
	WILLIAMSTON	NC
	GREENEVILLE	TN
	MEMPHIS	TN
4.83 /5.43	KENNESAW	GA
	KNOXVILLE	TN
	NASHVILLE	TN
	GALAX	VA
	RICHMOND	VA
	MORGANTOWN	WV
4.85 /5.45	JONESBORO	GA
	CROWDERS MT	NC
	NEWPORT	NC
	GOOSE CREEK	SC
	BENTON	TN
	WELCH	WV
4.87 /5.47	ROSWELL	GA
	LILLINGTON	NC
	WINSTON-SALEM	NC
	INMAN	SC
	KNOXVILLE	TN
	MOUNTAIN CITY	TN
	NASHVILLE	TN
	KINGSTON/LICK KB	WV
4.89 /5.49	MARTINEZ	GA
	VIENNA	GA
	FRNKLN/COWEE BLD	NC
	RALEIGH	NC
	MCMINVL/SHT MT	TN
	MEMPHIS	TN
	BLUEFIELD	VA
	BLUEFIELD	WV
6.625/6.025	MARTIN	TN
7.63 /6.03	HAPEVILLE	GA
6.655/6.055	BROWNSVILLE	TN
6.46 /6.06	SOUTH BOSTON	VA
6.685/6.085	FAYETTEVILLE	GA
	WAVERLY	TN
6.775/6.175	PULASKI	TN
6.835/6.235	HAMILTON	GA
6.895/6.295	HARTWELL*	GA
6.925/6.325	COVINGTON	GA
6.01 /6.61	COLUMBUS	GA
	WARNER ROBINS	GA
	GREENSBORO	NC
	NEW BERN	NC
	BEAUFORT	SC
	GRNVLE/CSRS HD	SC
	MYRTLE BEACH	SC
	CHATTANOOGA	TN
	NASHVILLE	TN
	BROMLEY MT	VA
	CHESAPEAKE	VA
	LYNCHBURG	VA
	SPENCER	WV
6.025/6.625	LAURINBURG	NC
	NEW MARKET	VA
6.035/6.635	BETSY LAYNE	EKY
6.04 /6.64	ATLANTA	GA
	CARROLLTON	GA
	WAYCROSS	GA
	HENDERSONVILLE	NC
	RALEIGH	NC
	WINSTON-SALEM	NC
	SUMTER	SC
	CROSSVILLE	TN
	MADISON	TN
	MEMPHIS	TN
	FINCASTLE	VA
	MARION	VA
	RICHMOND	VA
	ELKINS	WV
	HUNTINGTON	WV
6.055/6.655	CONCORD/KANNAP.	NC
	ALEXANDRIA	VA
	ALTAVISTA	VA
6.06 /6.66	MACON	GA
6.07 /6.67	HAZARD	EKY
	GAINESVILLE*	GA
	JESUP	GA
	BURLINGTON	NC
	FOREST CITY	NC
	COLUMBIA	SC
	BRISTOL	TN
	COOKEVILLE	TN
	LAFOLLETTE/WLT	TN
	NASHVILLE	TN
	BARREN SPRINGS	VA
	BRISTOL	VA
	LEXINGTON	VA
	WILLIAMSBURG	VA
	RAVENSWOOD	WV
6.085/6.685	ADAIRSVILLE	GA
	GRIFTON	NC
	STATESVILLE	NC
6.10 /6.70	ALBANY	GA
	JASPER	GA
	MILLEDGEVILLE	GA
	SAVANNAH	GA
	DUNN	NC
	GREENVILLE	SC
	LANCASTER	SC
	FRAYSER	TN
	MANCHESTER	TN
	MEMPHIS	TN
	UNION CITY	TN
	DANVILLE/WHT OAK	VA
	DUFFLD/POWLL MT	VA
	NORFOLK	VA
	RAVENSWOOD	WV
6.115/6.715	RINGGOLD	GA
	SPRING LAKE	NC
	BLACKSBURG	VA
	STERLING	VA
6.12 /6.72	COAL MTN	WV
6.13 /6.73	LOUISA	EKY
	ALBANY	GA
	ATHENS	GA
	BRUNSWICK	GA
	MARIETTA	GA
	RALEIGH	NC
	SALISBURY	NC
	WILMINGTON	NC
	N. AUGUSTA	SC
	SIMPSONVILLE	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	HAMPTON	VA
	ALDERSON	WV
6.145/6.745	DILLON/PEE DEE	SC
	DYERSBURG	TN
	ROANOKE	VA
6.16 /6.76	STONE MTN	GA
	VALDOSTA	GA
	ASHVL/MT PISGAH	NC
	GREENSBORO	NC
	WILSON	NC
	CHARLESTON	SC
	FT JACKSON	SC
	BRISTOL/HLSTN MT	TN
	NASHVILLE	TN
	CHARLOTTESVILLE	VA
	FOREST	VA
	HUNTINGTON	WV
	MORGANTOWN	WV
	WHEELING	WV
6.175/6.775	CHARLOTTE	NC
	ELIZABETHTOWN	NC
	WYTHEVILLE	VA
6.19 /6.79	PIKEVILLE	EKY
	FOLKSTON	GA
	MOULTRIE	GA
	NEWNAN*	GA
	SWAINSBORO	GA
	LEVEL CROSS/GBO	NC
	ANDSN/SASFRAS MT	SC
	SUMMERVILLE	SC
	CHATTANOOGA	TN
	JOHNSON CITY	TN
	NASHVILLE	TN
	CHESAPEAKE	VA
	FAIRFAX	VA
	OAK HILL	WV
6.205/6.805	FAYETTEVILLE	NC
	GASTONIA	NC
6.22 /6.82	ALBANY	GA
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	LYONS	GA
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	MEMPHIS	TN
	WINCHESTER	TN
	COVINGTON	VA
	WINCHESTER	VA
	CHARLESTON	WV
	CLARKSBURG	WV
6.235/6.835	ASHEVILLE	NC
	BODIE ISLAND	NC
	WADESBORO	NC
	HAZEL MT	VA
7.255/6.835	LEXINGTON	SC
6.25 /6.85	PIKEVILLE	EKY
	DALLAS	GA
	WARNER ROBINS	GA
	GOLDSBORO	NC
	HICKORY/BRT. MT	NC
	REIDSVILLE	NC
	FLORENCE	SC
	LAURENS	SC
	GTLBG/COVE MTN	TN
	MEMPHIS	TN
	NASHVILLE	TN
	PORTSMOUTH	VA
	STAUNTON	VA
	BKLY/FLAT TOP MT	WV
	BUCKHANNON	WV
6.265/6.865	GREENSBORO	NC
	FAYETTEVILLE	TN
7.465/6.865	WAXHAW	NC
6.28 /6.88	MAYTOWN	EKY
	COLUMBUS	GA
	MARIETTA	GA
	QUITMAN	GA
	SAVANNAH*	GA
	RALEIGH	NC
	SHELBY	NC
	COLUMBIA	SC
	SAVANNAH(GA)	SC
	BRISTOL	TN
	MEMPHIS	TN
	NASHVILLE	TN
	OAK RIDGE	TN
	BRISTOL	VA
	RICHMOND	VA
	SALEM	VA
	CHARLESTON	WV
6.295/6.895	MADISON	NC
	WAXHAW	NC
6.31 /6.91	MOREHEAD	EKY
	GAINESVILLE	GA
	GRIFFIN	GA
	AHOSKIE	NC
	ASHVL/SPIVEY MT	NC
	FAYETTEVILLE	NC
	LEXINGTON	NC
	WHITE HALL	SC
	SAVANNAH	TN
	SHORT MTN	TN
	FAIRFAX	VA
	FARMVILLE	VA
	JONESVILLE	VA
	MT. LK/BALD KNB	VA
	COTTAGEVILLE	WV
	FAIRMONT	WV
	MCMECHEN	WV
6.325/6.925	ROCK HILL	SC
	CHARLOTTESVILLE	VA
	DANVILLE(DCC)	VA
6.34 /6.94	ASHLAND	EKY
	ROME	GA
	WRIGHTSVILLE	GA
	BURGAW	NC
	CHARLOTTE	NC
	DURHAM	NC
	MANTEO	NC
	CHARLESTON	SC
	COLUMBIA	SC
	GREER	SC
	N. AUGUSTA	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN

	HAMPTON	VA
	RICHMOND	VA
	ROANOKE	VA
	NEW MARTINSVLLE	WV
	RICHWOOD	WV
	WEIRTON	WV
6.355/6.955	OLD FORT	NC
	ROCKINGHAM	NC
	JUMPING BRANCH	WV
6.37 /6.97	ATLANTA	GA
	SAVANNAH*	GA
	MT AIRY	NC
	SMITHFIELD	NC
	ANDERSON/LOCAL	SC
	FLORENCE	SC
	SAVANNAH(GA)	SC
	ALTAMONT	TN
	KNGSPT/BAYS MT	TN
	MEDINA	TN
	OAK RIDGE	TN
	MANASSAS	VA
	VIRGINIA BEACH	VA
	LOGAN	WV
	PARKERSBURG	WV
6.385/6.985	PRESTON	GA
	ALBEMARLE	NC
	DILLSBORO	NC
	ROANOKE/POOR MT	VA
6.40 /7.00	ATLANTA	GA
	LAGRANGE	GA
	HIGH POINT/GBO	NC
	JACKSONVILLE	NC
	MARION	SC
	PICKENS	SC
	MEMPHIS	TN
	SUFFOLK	VA
	ST ALBANS	WV
7.60 /7.00	ELKHORN CITY	EKY
	HIGH POINT/GBO	NC
	BLOUNTVILLE	TN
	CHATTANOOGA	TN
	CLARKSVILLE	TN
	HAYSI	VA
	TERRA ALTA	WV
7.615/7.015	CHARLOTTE	NC
	SUMTER	SC
	NASHVILLE	TN
	FREDRICKSBURG	VA
6.43 /7.03	ERWIN	NC
	ROCK HILL	SC
	FRAYSER	TN
	LEXINGTON	TN
	DEWITT	VA
7.63 /7.03	PANTSVILLE	EKY
	GREENSBORO	NC
	ROANOKE RAPIDS	NC
	MYRTLE BEACH, N	SC
	FAYETTEVILLE	TN
	MEMPHIS	TN
	MORRISTOWN	TN
	WAYNESBORO	VA
	MULLENS	WV
6.445/7.045	HOPE MILLS	NC
	ROBBINSVILLE	NC
	ARLINGTON	VA
7.645/7.045	METTER	GA
	STATSVL/ASBRY MT	NC
	RADFORD	VA
	STAUNTON	VA
	VIRGINIA BEACH	VA
6.06 /7.06	MADISON	WV
6.46 /7.06	COHUTTA-RTTY	GA
	CHARLOTTE	NC
	ELIZABETH CITY	NC
	MEMPHIS	TN
	PRINCETON	WV
7.66 /7.06	MACON	GA
	THOMASVILLE	GA
	MACO	NC
	SUMTER	SC
	GREENEVILLE	TN
	SHELBYVILLE	TN
	RICHMOND	VA
	POINT PLEASANT	WV
6.475/7.075	BURLINGTON	NC
7.675/7.075	BURLINGTON	NC
	GREENVILLE	SC
	KNOXVILLE	TN
	WAYNSBR/AFTON MT	VA
7.69 /7.09	GREENVL/ESTN NC	NC
	ORANGEBURG	SC
	SPARTANBURG	SC
	MEMPHIS	TN
	SPARTA	TN
	GALAX/BRIRP MT	VA
7.70 /7.10	BLAIRSVILLE	GA
7.705/7.105	MARION/OLD FORT	NC
	MONROE/UCARS	NC
	BEDFORD	VA
	BRIDGEPORT	WV
6.09 /7.11	LOGAN	WV
7.72 /7.12	AUGUSTA*	GA
	CEDARTOWN	GA
	GAST/SPCR MT	NC
	ROCKY MOUNT	NC
	MYRTLE BEACH	SC
	COLUMBIA	TN
	MEMPHIS	TN
	OAK RIDGE	TN
	CULPEPPER	VA
	BRIDGEPORT	WV
	DUNBAR	WV
7.735/7.135	LAKE TOXAWAY	NC
	CHERAW	SC
	GALAX	VA
	RICHMOND	VA
7.75 /7.15	CUMMING	GA
	MORGANTON	NC
	RALEIGH	NC
	MONCKS CORNER	SC
	SIMPSONVILLE	SC
	MEMPHIS	TN
	NASHVILLE	TN
	OAK RIDGE	TN
	TAZEWELL	VA
	COAL MTN	WV
	MCMECHEN	WV
7.765/7.165	HIGH POINT	NC
	GREENWOOD	SC
	NEWPORT NEWS	VA
	WARRENTON	VA
7.78 /7.18	AUGUSTA*	GA
	BALDWIN	GA
	MT AIRY	NC
	SANFORD	NC
	WILMINGTON	NC
	CAROWINDS	SC
	GOOSE CREEK	SC
	CLEVELAND	TN
	MEMPHIS	TN
	NASHVILLE	TN
	DUBLIN	VA
	PETERSBURG	VA
	LEON	WV
7.795/7.195	ATLANTA	GA
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	LYNCHBURG	VA
7.81 /7.21	ROSSVILLE	GA
	STATESBORO	GA
	GREENSBORO	NC
	WHITEVILLE	NC
	LITTLE MT.	SC
	COOKEVILLE	TN
	JACKSON	TN
	MCLEAN	VA
	WISE/HIGH KNOB	VA
7.825/7.225	HILLSBOROUGH	NC
	MORRISTOWN	TN
7.84 /7.24	ASHLAND	EKY
	IRWINTON	GA
	CARTHAGE	NC
	EDEN/MAYODAN	NC
	FOREST CITY	NC
	FRANKLIN	NC
	LANCASTER	SC
	PROSPERITY	SC
	GALLATIN	TN
	MEMPHIS	TN
	PETERSBURG	VA
	WOODBRIDGE	VA
7.855/7.255	ATLANTA	GA
	ASHEBORO	NC
	HENDSVL/STONY MT	NC
	PARKSLEY	VA
	MARTINSBURG	WV
7.87 /7.27	AMERICUS	GA
	BUFORD	GA
	BENSON	NC
	WAYNESVILLE	NC
	CHARLSTN/LDSN	SC
	LONG MT	SC
	GALLATIN	TN
	JOHNSON CITY	TN
	MEMPHIS	TN
	GUM SPRING	VA
	SCOTT DEPOT	WV
7.885/7.285	AIKEN	SC
	ROCKY SPUR	SC
	MARTINSVILLE	VA
7.90 /7.30	SVR CRK/MT ALTO	GA
	JACKSONVILLE	NC
	TUCKASEGEE	NC
	CHARLESTON	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	BERRYVILLE	VA
	CLIFTON FORGE	VA
	FRANKLIN	VA
	HUNTINGTON	WV
7.915/7.315	UNION CROSS	NC
	CENTERVILLE	TN
	ALEXANDRIA	VA
7.92 /7.32	GRUNDY	VA
7.93 /7.33	LAGRANGE	GA
	TOCCOA*	GA
	FAYVLLE/FT BRAGG	NC
	LENOIR	NC
	COLUMBIA	SC
	COVINGTON	TN
	CROSSVILLE	TN
	NASHVILLE	TN
	LEXNGTN/COLE MT	VA
	WARSAW	VA
7.94 /7.34	BLACK MOUNTAIN*	EKY
7.945/7.345	SHELBY	NC
	HENDERSONVILLE	TN
	GATE CITY	VA
	FRANKLIN	WV
7.95 /7.35	DANVILLE	VA
7.96 /7.36	DOUGLASVILLE	GA
	DUBLIN	GA
	BOONE	NC
	GREENVILLE	NC
	LUMBERTON	NC
	COLUMBIA	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	PARIS	TN
	CHESTERFIELD	VA
7.975/7.375	BURNSVILLE	NC
	HILLSVILLE	NC
	GEORGETOWN	SC
	HILLSVILLE	VA
	LYNCHBURG	VA
	NEWPORT NEWS	VA
	GRAFTON	WV
	ST ALBANS	WV
7.99 /7.39	JENKINS	EKY
	THOMASTON	GA
	CHARLOTTE	NC
	EDEN/STONEVILLE	NC
	SMITHFIELD	NC
	LEXINGTON	SC
	DAYTON/RHEA CTY	TN
	GALLATIN	TN
	MEMPHIS	TN
	PETERSBURG	VA
	PARKERSBURG	WV
6.43 /7.43	GRIFFIN	GA
5.00 /7.50	CHARLOTTE	NC
6.19 /7.51	MEMPHIS	TN
7.015/7.615	CLEVELAND	GA
	WARNER ROBINS	GA
7.075/7.675	BUFORD	GA
7.135/7.735	VALDOSTA	GA
	ALAMO	TN
7.21 /7.81	CONYERS	GA
7.225/7.825	CLOUDLAND	GA
7.285/7.885	ASHBURN	GA
	BIRMINGHAM(ALA)	TN
7.30 /7.90	ROME	GA
	MONROE	NC
7.315/7.915	DALTON*	GA
	FORSYTH	GA
6.085/7.955	MORGANTOWN	WV
7.375/7.975	ATHENS*	GA
	GREENVILLE	SC
5.23 /ET	HAMPTON	VA

220 MHZ

2.30 /3.90	COLUMBIA	SC
	NASHVILLE	TN
2.32 /3.92	HIGH POINT	NC
2.34 /3.94	CANTON	GA
	ASHVL/MT PISGAH	NC
	HILLSBOROUGH	NC
	CLARKSVILLE	TN
	MEMPHIS	TN
	FAIRFAX	VA
2.36 /3.96	ROCKY MOUNT	NC
2.38 /3.98	LINWOOD	NC
	GALLATIN	TN
2.40 /4.00	LOCUST	NC
2.42 /4.02	FAYETTEVILLE	NC
	HICKORY	NC
	NASHVILLE	TN
2.46 /4.06	EASLEY/SASFRS MT	SC
2.48 /4.08	NASHVILLE	TN
2.52 /4.12	KENNESAW	GA
2.54 /4.14	PICKENS/CSRS HD	SC
	FRANKLIN	TN
	HUNTINGTON	WV
2.56 /4.16	LENOIR	NC
2.62 /4.22	NASHVILLE	TN
2.64 /4.24	CANTON/CHBRS MT	NC
2.70 /4.30	STATESVILLE	NC
2.74 /4.34	FRIES	VA
2.80 /4.40	CHARLOTTE	NC
	PICKENS	SC
2.86 /4.46	KNOXVILLE	TN
2.90 /4.50	KNOXVILLE	TN
2.94 /4.54	MT MITCHELL	NC
3.00 /4.60	ASHEVILLE	NC
3.04 /4.64	RALEIGH	NC
	WINSTON-SALEM	NC
3.06 /4.66	CANTON	GA
3.08 /4.68	CHARLOTTE	NC
3.10 /4.70	WSTFLD/SAUTN MT	NC
3.14 /4.74	KINGSTON/LICK KB	WV
3.16 /4.76	SALISBURY	NC
	DAN/WHT OAK	VA
3.18 /4.78	CHATTANOOGA	TN
3.20 /4.80	MORGANTON	NC
3.22 /4.82	ATLANTA	GA
	GREENSBORO	NC
	KNOXVILLE	TN
	ALEXANDRIA	VA
3.28 /4.88	WSTFLD/SAUTN MT	NC
3.30 /4.90	COLUMBIA	SC
	CHATTANOOGA	TN
3.34 /4.94	KENNESAW	GA
	GREENEVILLE	TN
	ROANOKE/POOR MTN	VA
3.36 /4.96	CHERRYVILLE	NC

440 MHZ

9.25 /7.25	ALBANY	GA
	CHATTANOOGA	TN
7.00 /2.00	WINCHESTER	VA
7.05 /2.05	MEDINA	TN
7.25 /2.25	COVINGTON	VA
7.50 /2.50	KNOXVILLE	TN
7.75 /2.75	ROANOKE	VA
7.80 /2.80	FRANKLIN	TN
	MEMPHIS	TN
7.90 /2.90	HIGH POINT	NC
8.00 /3.00	WIN-SAL/SAUTN MT	NC
	MEMPHIS	TN
8.30 /3.30	GATLBG/COVE MT	TN
8.40 /3.40	MEMPHIS	TN
8.50 /3.50	TYSONS CORNER	VA
8.65 /3.65	MT MITCHELL	NC
	HAMPTON	VA
8.70 /3.70	LOCUST	NC
8.75 /3.75	ALAMO	TN
	FINCASTLE	VA
9.00 /4.00	ARLINGTON	VA
9.05 /4.05	WAYNSBR/AFTON MT	VA
9.10 /4.10	HILLSBOROUGH	NC
	COLUMBIA	SC
	CHATTANOOGA	TN
9.15 /4.15	LEXNGTN/COLE MT	VA
9.20 /4.20	COLUMBUS	GA
9.25 /4.25	CHARLOTTESVILLE	VA
9.30 /4.30	FISHERVILLE	TN
	KNOXVILLE	TN
	WAYNESBORO	VA
9.35 /4.35	LYNCHBURG	VA
9.40 /4.40	FAYETTEVILLE	NC
	OAK RIDGE	TN
9.35 /4.45	GALLATIN	TN
9.45 /4.45	GALLATIN	TN
	FALLS CHURCH	VA
9.50 /4.50	KENNESAW	GA
	MEMPHIS	TN
	LYNCHBURG	VA
	RICHMOND	VA
9.10 /4.509	CHARLESTON	SC
9.55 /4.55	MILAN	TN
	NASHVILLE	TN
9.60 /4.60	CHARLOTTE	NC
	KNOXVILLE	TN
9.65 /4.65	GREENEVILLE	TN
9.675/4.675	NASHVILLE	TN
9.70 /4.70	ROCKY MOUNT	NC
	KNOXVILLE	TN
	MORGANTOWN	WV
9.75 /4.75	ROCK HILL	SC
9.775/4.775	NASHVILLE	TN
9.80 /4.80	CANTON/CHBRS MT	NC
	GREENVILLE	NC
	MEMPHIS	TN
	KINGSTON/LICK KB	WV
	MORGANTOWN	WV
9.85 /4.85	CHARLOTTE	NC
	PETERSBURG	VA
9.875/4.875	NASHVILLE	TN
9.90 /4.90	ASHVL/MT PISGAH	NC
	GREENSBORO	NC
9.95 /4.95	VIRGINIA BEACH	VA
9.975/4.975	BUCKHEAD	GA
	NASHVILLE	TN
2.50 /7.50	ROANOKE/POOR MT	VA

NORTH CAROLINA REPEATERS

2-METERS

AHOSKIE	WB4YNF	144.53	145.13	A
AHOSKIE	WA4ZGQ	146.31	146.91	N PA
ALBEMARLE	K4OGB	146.385	146.985	
ASHEBORO	WD4AIB	147.855	147.255	PAL
ASHEVILLE	WA4QCO	146.235	146.835	A
ASHVL/MT PISGAH	WA4BVW	146.16	146.76	
ASHVL/SPIVEY MT	W4MOE	146.31	146.91	
BENSON	WR4ARL	147.87	147.27	N PA
BODIE ISLAND	KE4PB	146.235	146.835	N C
BOONE	WA4KDB	147.96	147.36	
BREVARD/TRNS CTY	W4EHV	147.795	147.195	N
BURGAW	K4LZY	146.34	146.94	
BURLINGTON	WB4ZIN	146.07	146.67	
BURLINGTON	W4VGZ	146.475	147.075	N EA
BURLINGTON	WA4HBQ	147.675	147.075	N EA
BURNSVILLE	WA4LLR	147.975	147.375	A
CANTON/CHBRS MT	WB4OKG	144.75	145.35	
CARTHAGE	W4NIW	147.84	147.24	EA
CHARLOTTE	KE4ZC	144.57	145.17	
CHARLOTTE	W4BFB	144.63	145.23	
CHARLOTTE	WD4JWO	144.69	145.29	N
CHARLOTTE	WB4HTR	144.75	145.35	N
CHARLOTTE	KA4HNP	145.00	147.50	N
CHARLOTTE	W4BFB	146.175	146.775	R
CHARLOTTE	WR4AEU	146.34	146.94	A
CHARLOTTE	WR4ALO	146.46	147.06	N A
CHARLOTTE	WB4KPF	147.615	147.015	PA
CHARLOTTE	WD4PLY	147.99	147.39	N
CHRYVL/BKRS MT	WB4UDS	144.55	145.15	
CONCORD/KANNAP.	K4CEB	146.055	146.655	A
CROWDERS MT	WD4PLY	144.85	145.45	N
DILLSBORO	WB4NSS	146.385	146.985	
DUNN	WB4FXM	146.10	146.70	PA
DURHAM	WA4WTX	146.22	146.82	N
DURHAM	WA4BFT	146.34	146.94	N A
EDEN/MAYODAN	WA4ACP	147.84	147.24	N
EDEN/STONEVILLE	WA4QBG	147.99	147.39	
ELIZABETH CITY	WA4VTX	146.46	147.06	N A
ELIZABETHTOWN	N4DHW	146.175	146.775	N
ERWIN	WR4ALY	146.43	147.03	N
FAYETTEVILLE	N4EWG	146.205	146.805	
FAYETTEVILLE	WB4YZF	146.31	146.91	
FAYVLLE/FT BRAGG	W4LPL	147.93	147.33	
FOREST CITY	W4TMT	146.07	146.67	N A
FOREST CITY	WA4BKU	147.84	147.24	N
FRANKLIN	WB4YAO	147.84	147.24	
FRNKLN/COWEE BLD	N4AC	144.89	145.49	
GAST/SPCR MT	W4REW	147.72	147.12	A
GASTONIA	K4ZFD	146.205	146.805	N L
GOLDSBORO	K4CYP	146.25	146.85	A
GREENSBORO	N4AZM	144.65	145.25	A
GREENSBORO	K4SNI	146.01	146.61	A
GREENSBORO	WA4MSS	146.16	146.76	
GREENSBORO	WR4AUA	146.265	146.865	N
GREENSBORO	WD4IPZ	147.63	147.03	PA
GREENSBORO	WR4ANL	147.81	147.21	N
GREENVILLE	WA4DAN	144.75	145.35	
GREENVILLE	W4AMC	147.96	147.36	
GREENVL/ESTN NC	W4GDF	147.69	147.09	
GRIFTON	W4NBR	146.085	146.685	
HENDERSONVILLE	WB4YAO	146.04	146.64	N L
HENDSVL/PINCK MT	WA4KNI	144.67	145.27	
HENDSVL/STONY MT	WA4KNI	147.855	147.255	
HICKORY/BRT. MT	WR4ACM	146.25	146.85	N
HIGH POINT	N4XO	144.51	145.11	N
HIGH POINT	KA4DHP	147.765	147.165	PA
HIGH POINT/GBO	N4AZM	146.40	147.00	LPA
HIGH POINT/GBO	N4AZM	147.60	147.00	LPA
HILLSBOROUGH	WA4WTX	147.825	147.225	A
HILLSVILLE	WD4BTS	147.975	147.375	N A
HOPE MILLS	WB4TRW	146.445	147.045	N
JACKSONVILLE	WD4FVO	146.40	147.00	PA
JACKSONVILLE	WR4ATW	147.90	147.30	N
LAKE TOXAWAY	W4EHV	147.735	147.135	
LAURINBURG	K4QWK	146.025	146.625	A
LENOIR	KN4K	147.93	147.33	
LEVEL CROSS/GBO	K4VUW	146.19	146.79	
LEWISVILLE	N4GGK	144.61	145.21	
LEXINGTON	K4IZM	146.31	146.91	PA
LILLINGTON	WA4FKI	144.87	145.47	N
LUMBERTON	WB4MDI	147.96	147.36	
MACO	WA4LED	147.66	147.06	
MADISON	KA4YFF	146.295	146.895	R
MANTEO	W4PCN	146.34	146.94	PA
MARION/OLD FORT	KA4DEC	147.705	147.105	
MAYODAN	N4GWZ	144.55	145.15	N C
MONROE	K4BGU	147.30	147.90	N
MONROE/UCARS	K4JCK	147.705	147.105	A
MORGANTON	K4RP	147.75	147.15	
MT AIRY	WA4ZAS	146.37	146.97	EA
MT AIRY	WA4CQK	147.78	147.18	N
MT AIRY/FANCY GP	WD4MDP	144.73	145.33	
MT MITCHELL	WA4BVW	144.59	145.19	
N. WILKESBORO	K4ITL	144.77	145.37	L
NEW BERN	WD4JMS	146.01	146.61	A
NEWPORT	K4GRW	144.85	145.45	A
OLD FORT	KA4ROZ	146.355	146.955	N C
OXFORD	WA4JCS	144.57	145.17	A
RALEIGH	N4BEA	144.67	145.27	PA
RALEIGH	N4BEA	144.89	145.49	PA
RALEIGH	W4DW	146.04	146.64	A
RALEIGH	K4BWC	146.13	146.73	A
RALEIGH	K4ITL	146.28	146.88	
RALEIGH	K4ITL	147.75	147.15	PA
REIDSVILLE	K4YFT	146.25	146.85	
ROANOKE RAPIDS	K4PUV	147.63	147.03	
ROARING GAP	WB4PZA	146.22	146.82	
ROBBINSVILLE	WD4CNS	146.445	147.045	
ROCKINGHAM	WA4ULA	146.355	146.955	N
ROCKY MOUNT	WB4WAA	147.72	147.12	A
SALISBURY	W4EXU	146.13	146.73	
SANFORD	WB4EJJ	147.78	147.18	A
SHELBY	WD4DJA	146.28	146.88	
SHELBY	WD4DJA	147.945	147.345	A
SMITHFIELD	KD4JQ	146.37	146.97	A
SMITHFIELD	W4MKL	147.99	147.39	PA
SPRING LAKE	WB4KDC	146.115	146.715	N
STATESVILLE	AI4O	146.085	146.685	PA
STATSVL/ASBRY MT	WA4JRL	147.645	147.045	
TUCKASEGEE	W8OMV	147.90	147.30	N
UNION CROSS	WA4RBW	147.915	147.315	
WADESBORO	W4USH	146.235	146.835	N
WAXHAW	WB4OOA	146.295	146.895	PA
WAXHAW	WA4ZRS	147.465	146.865	A
WAYNESVILLE	N4SM	147.87	147.27	PA
WHITEVILLE	K4MSD	147.81	147.21	
WILLIAMSTON	KA4KNU	144.81	145.41	
WILMINGTON	N4WI	146.13	146.73	PA
WILMINGTON	WB4UNG	146.22	146.82	
WILMINGTON	WD4HMA	147.78	147.18	N C
WILSON	WB4THL	146.16	146.76	
WIN-SAL/SAUTN MT	WB4KQN	144.79	145.39	L
WINSTON-SALEM	W4HKB	144.87	145.47	N P
WINSTON-SALEM	WA4GIC	146.04	146.64	A

220 MHZ

ASHEVILLE	NC4N	223.00	224.60	
ASHVL/MT PISGAH	WA4BVW	222.34	223.94	
CANTON/CHBRS MT	WB4OKG	222.64	224.24	C

CVRA REPEATER SYMBOLS

Unmarked in First Code column-Full CVRA Members

N	NON Member CVRA	RB	Remote Base System
D	Delinquent Member	T	Tone Access Repeater
M	T-MARC Repeater	L	Linked Repeater
A	Open Autopatch	R	Radioteletype Rptr.
PA	Private Autopatch	V	Television (SS or ATV)
EA	Emerg. Autopatch	P	Proposed Repeater
		C	Under Construction
		O	Off Air Temporarily

CHARLOTTE	KE4ZC	222.80	224.40		
CHARLOTTE	WB4KPF	223.08	224.68		LA
CHERRYVILLE	WB4UDS	223.36	224.96		
FAYETTEVILLE	W4EHF	222.42	224.02		
GREENSBORO	N4AZM	223.22	224.82		
HICKORY	WR4ACM	222.42	224.02	N	
HIGH POINT	K4AZA	222.32	223.92		LPA
HILLSBOROUGH	WA4WTX	222.34	223.94		L
LENOIR	K4HTV	222.56	224.16	N	C
LINWOOD	KA4HUV	222.38	223.98	N	
LOCUST	WA4ZIA	222.40	224.00		
MORGANTON	WB4PML	223.20	224.80		
MT MITCHELL	WA4BVW	222.94	224.54		
RALEIGH	WA4PEN	223.04	224.64	N	
ROCKY MOUNT	KA4DAP	222.36	223.96	N	
SALISBURY	W4EXU	223.16	224.76		
STATESVILLE	WA4PVI	222.70	224.30	N	
WINSTON-SALEM	WA4YHH	223.04	224.64	N	
WSTFLD/SAUTN MT	W4RXG	223.10	224.70		R
WSTFLD/SAUTN MT	W4RXG	223.28	224.88		

440 MHZ

ASHVL/MT PISGAH	WA4COS	449.90	444.90	N	
CANTON/CHBRS MT	WB4OKG	449.80	444.80		C
CHARLOTTE	W4BFB	444.60	449.60		P
CHARLOTTE	WR4AEU	449.60	444.60		P
CHARLOTTE	WR4ALO	449.85	444.85	N	
FAYETTEVILLE	KB4ZW	449.40	444.40	N	C
GREENSBORO	WB4HZI	449.90	444.90	N	
GREENVILLE	AI4J	449.80	444.80	N	
HIGH POINT	K4AZA	447.90	442.90		L
HILLSBOROUGH	WA4WTX	449.10	444.10		
LOCUST	WA4LBT	448.70	443.70		
MT MITCHELL	WA4BVW	448.65	443.65		C
ROCKY MOUNT	N4JEH	449.70	444.70		C
WIN-SAL/SAUTN MT	WB4KQN	448.00	443.00		LC

6-METERS

CARY	WR4AVP	52.35	53.35	N	
CHARLOTTE	KE4ZC	52.03	53.03		
HENDERSONVILLE	WB4YAO	52.01	53.01	N	
HENDERSONVILLE	WB4YAO	52.525	52.525	N	RB
HICKORY	WR4ACM	52.47	53.47	N	
HIGH POINT	K4AZA	52.15	53.15		L
NEWPORT	K4GRW	52.01	53.01	N	P
ROANOKE RAPIDS	K4PUV	52.03	53.03		C
STATESVILLE	WA4WRS	52.67	53.67	N	

TENNESSEE REPEATERS

2-METERS

ALAMO	WB4EDS	147.135	147.735		
ALTAMONT	WR4AWN	146.37	146.97	N	
ATHENS	WB4GRC	144.71	145.31	N	
BENTON	K4SIR	144.85	145.45	N	
BIRMINGHAM(ALA)	WD4BXA	147.285	147.885		A
BLOUNTVILLE	WA4KMG	147.60	147.00		
BRISTOL	N4GFD	144.69	145.29	N	C
BRISTOL	K4ILW	146.07	146.67		A
BRISTOL	WD4CYZ	146.28	146.88		
BRISTOL/HLSTN MT	WR4ADO	146.16	146.76	N	
BROWNSVILLE	WA4ABU	146.655	146.055		PA
CENTERVILLE	WB4PZB	147.915	147.315	N	
CHATTANOOGA	W4AM	144.73	145.33		C
CHATTANOOGA	KB4TZ	144.79	145.39		A
CHATTANOOGA	K4CMY	146.01	146.61		
CHATTANOOGA	W4DSK	146.19	146.79		A
CHATTANOOGA	WA4ZOK	147.60	147.00		PA
CHATTANOOGA-RTTY	K4CMY	144.53	145.13	N	
CLARKSVILLE	WA4TEQ	147.60	147.00	N	
CLEVELAND	WR4AQV	147.78	147.18	N	
COLUMBIA	WR4AIX	147.72	147.12	N	
COOKEVILLE	WA4UCE	146.07	146.67	N	A
COOKEVILLE	N4WS	147.81	147.21		
COVINGTON	WA4VXW	147.93	147.33	N	
CROSSVILLE	KE4RX	146.04	146.64	N	
CROSSVILLE	W4CV	147.93	147.33	N	
DAYTON/RHEA CTY	K4ZLA	147.99	147.39	N	
DECATUR-PONE KB	W4RJC	144.55	145.15		
DYERSBURG	AA4HF	146.145	146.745	N	
FAYETTEVILLE	KO4G	146.265	146.865	N	
FAYETTEVILLE	W4NIQ	147.63	147.03	N	
FISHERVILLE	N4DRL	144.65	145.25	N	A
FRANKLIN	WB4HCK	144.55	145.15	N	RB
FRAYSER	W4UFT	146.10	146.70	N	
FRAYSER	W4ZJM	146.43	147.03	N	
GALLATIN	W4NIT	147.84	147.24		PA
GALLATIN	WA4YQC	147.87	147.27		
GALLATIN	WB4DLQ	147.99	147.39	N	
GREENEVILLE	N4TV	144.65	145.25		
GREENEVILLE	WB4TUO	144.81	145.41		
GREENEVILLE	WA4LYF	147.66	147.06		A
GTLBG/COVE MTN	WA4KJH	146.25	146.85		
HENDERSONVILLE	WD4FFM	147.945	147.345	N	
JACKSON	W4WKZ	147.81	147.21	N	
JASPER	KA4LGN	144.59	145.19	N	
JOHNSON CITY	WB4SQC	144.57	145.17		PA
JOHNSON CITY	WB4IKB	146.19	146.79		L
JOHNSON CITY	KE4FH	147.87	147.27		A
KNGSPT/BAYS MT	W4TRC	146.37	146.97		
KNOXVILLE	WB4JSD	144.51	145.11		R
KNOXVILLE	K4KFD	144.61	145.21	N	A
KNOXVILLE	WA4TEM	144.73	145.33		A
KNOXVILLE	WA4GZE	144.77	145.37		
KNOXVILLE	WB4GBI	144.83	145.43		
KNOXVILLE	WB4GBI	144.87	145.47		
KNOXVILLE	WB4IOB	146.13	146.73		
KNOXVILLE	K4HXD	146.34	146.94		
KNOXVILLE	K4HXD	147.675	147.075		A
KNOXVILLE	W4BBB	147.90	147.30		A
KNOXVILLE	WB4HAP	147.96	147.36		
LAFOLLETTE/WLT	W4TZG	146.07	146.67		
LAKE CITY	WB4OAH	146.22	146.82	N	
LEXINGTON	WB4LGH	146.43	147.03	N	
LOUDON	KE4SK	144.57	145.17		
MADISON	WB4NTM	146.04	146.64	N	
MANCHESTER	W4FOT	146.10	146.70	N	A
MARTIN	WA4ZQX	146.625	146.025		
MCMINNVILLE	WA4CPJ	144.63	145.23	N	A
MCMINVL/SHT MT	W4KKO	144.89	145.49		
MEDINA	K4BEZ	146.37	146.97		A
MEMPHIS	WA4VIP	144.81	145.41	N	
MEMPHIS	WA4KOG	144.89	145.49	N	
MEMPHIS	WB4MQD	145.33	PKET	N	
MEMPHIS	W4GYS	146.04	146.64	N	
MEMPHIS	WR4AOG	146.10	146.70	N	R
MEMPHIS	KA4JXT	146.13	146.73	N	
MEMPHIS	WR4ABS	146.19	147.51	N	
MEMPHIS	W4BS	146.22	146.82	N	
MEMPHIS	WA4KOG	146.25	146.85	N	A
MEMPHIS	WA4ETE	146.28	146.88	N	A
MEMPHIS	K4BN	146.34	146.94	N	A
MEMPHIS	K4FZJ	146.40	147.00	N	
MEMPHIS	WA4MQQ	146.46	147.06	N	
MEMPHIS	W4ZJM	147.63	147.03	N	L
MEMPHIS	WR4AWT	147.69	147.09	N	
MEMPHIS	WB4DAZ	147.72	147.12	N	AT
MEMPHIS	WA5KUB	147.75	147.15	N	
MEMPHIS	WA4KOG	147.78	147.18	N	
MEMPHIS	WD4APK	147.84	147.24	N	
MEMPHIS	WR4AZC	147.87	147.27	N	
MEMPHIS	WA4ADT	147.90	147.30	N	
MEMPHIS	W4MMI	147.96	147.36	N	
MEMPHIS	WR4ASR	147.99	147.39	N	
MIDDLEBRO(KY/TN)	W4PPM	144.63	145.23	N	
MORRISTOWN	WD4RTT	147.63	147.03		
MORRISTOWN	WB4OAH	147.825	147.225	N	
MOUNTAIN CITY	WD4OMO	144.87	145.47	N	
MT. JULIET	WB4DOR	144.79	145.39	N	
NASHVILLE	N4AJS	144.65	145.25		PA
NASHVILLE	KA4KNG	144.75	145.35	N	

NASHVILLE	WB4ZSA	144.83	145.43	
NASHVILLE	N4ARK	144.87	145.47	N
NASHVILLE	WA4PCD	146.01	146.61	
NASHVILLE	WB4NTM	146.07	146.67	N
NASHVILLE	WB4QES	146.16	146.76	N
NASHVILLE	WR4AFA	146.19	146.79	PA
NASHVILLE	WA4PCD	146.25	146.85	
NASHVILLE	WB4QES	146.28	146.88	N
NASHVILLE	WA4PCD	146.34	146.94	
NASHVILLE	AF4K	147.615	147.015	N
NASHVILLE	WA4PCD	147.75	147.15	
NASHVILLE	WA4PCD	147.78	147.18	
NASHVILLE	WB4ZSA	147.90	147.30	PA
NASHVILLE	N4AJS	147.93	147.33	PA
NASHVILLE	WD4FFM	147.96	147.36	N
OAK RIDGE	W4SKH	146.28	146.88	
OAK RIDGE	W4SKH	146.37	146.97	A
OAK RIDGE	K4EAJ	147.72	147.12	L
OAK RIDGE	K4EAJ	147.75	147.15	R
PARIS	K4KLX	147.96	147.36	N
PULASKI	KA4CCL	146.775	146.175	N
SAVANNAH	WB4DQU	146.31	146.91	N
SHELBYVILLE	W4QEB	147.66	147.06	A
SHORT MTN	W4YXA	146.31	146.91	
SMYRNA	WB4LHO	144.57	145.17	PA
SPARTA	W4BSA	147.69	147.09	A
STANTONVILLE	KA4OHC	144.79	145.39	
UNION CITY	WA4YGM	146.10	146.70	N
WAVERLY	NO4Q	146.685	146.085	
WINCHESTER	WR4AFH	146.22	146.82	N

220 MHZ

CHATTANOOGA	K4VCM	223.18	224.78	A
CHATTANOOGA	WA4ZOK	223.30	224.90	
CLARKSVILLE	KF4GP	222.34	223.94	N
FRANKLIN	WD4SGS	222.54	224.14	N
GALLATIN	WB4ZSA	222.38	223.98	PA
GREENEVILLE	WB4NKM	223.34	224.94	A
KNOXVILLE	WA4YON	222.86	224.46	EA
KNOXVILLE	W4BBB	222.90	224.50	
KNOXVILLE	KB4CTS	223.22	224.82	N C
MEMPHIS	W4ZJM	222.34	223.94	N L
NASHVILLE	WB4RAB	222.30	223.90	N
NASHVILLE	N4TB	222.42	224.02	N
NASHVILLE	WR4	222.48	224.08	N
NASHVILLE	N4AWB	222.62	224.22	N

440 MHZ

ALAMO	WB4EDS	448.75	443.75	L
CHATTANOOGA	WA4ZOK	439.25	427.25	V
CHATTANOOGA	WA4NFO	449.10	444.10	
FISHERVILLE	N4DDS	449.30	444.30	N A
FRANKLIN	WB4EPG	447.80	442.80	N
GALLATIN	WA4YQC	449.35	444.45	
GALLATIN	WD4KWP	449.45	444.45	PA
GATLBG/COVE MT	WA4KJH	448.30	443.30	N
GREENEVILLE	WB4NKM	449.65	444.65	
KNOXVILLE	WB4HAP	447.50	442.50	
KNOXVILLE	K4HXD	449.30	444.30	
KNOXVILLE	KB4NK	449.60	444.60	EA
KNOXVILLE	WB4GBI	449.70	444.70	
MEDINA	K4BEZ	447.05	442.05	AL
MEMPHIS	WA4KOG	444.40	449.40	N
MEMPHIS	WA4QWW	447.80	442.80	N
MEMPHIS	W4ZJM	448.00	443.00	N
MEMPHIS	WA4DOA	448.40	443.40	N A
MEMPHIS	KA4JKT	449.50	444.50	N A
MEMPHIS	WD4APK	449.80	444.80	N
MILAN	WD4ABJ	449.55	444.55	N
NASHVILLE	WA4PCD	449.55	444.55	
NASHVILLE	WA4PCD	449.675	444.675	
NASHVILLE	N4TK	449.775	444.775	N
NASHVILLE	WB4THG	449.875	444.875	N
NASHVILLE	WB4QES	449.975	444.975	N
OAK RIDGE	K4EAJ	449.40	444.40	L

10-METERS

KNOXVILLE	K4HXD	29.52	29.62	C
MEMPHIS	W4ZJM	29.52	29.62	N

6-METERS

CHATTANOOGA	WB4LRD	52.01	53.01	N
KNOXVILLE	WB4IOB	52.15	53.15	A
KNOXVILLE	WA4YON	52.25	53.25	
KNOXVILLE	K4HXD	52.76	52.525	
MEMPHIS	WA4KOG	52.01	53.01	N

VIRGINIA REPEATERS

2-METERS

ALEXANDRIA	WD4PDP	146.055	146.655	M
ALEXANDRIA	W4HFH	147.915	147.315	M
ALTAVISTA	WA4ISI	146.055	146.655	N
ARLINGTON	WA4YVN	146.445	147.045	M
BARREN SPRINGS	K4HZS	146.07	146.67	
BEDFORD	WB4JBJ	147.705	147.105	LR
BERRYVILLE	WA4TSC	147.90	147.30	M
BLACKSBURG	AB9I	146.115	146.715	
BLAND	N4AZJ	144.75	145.35	N L
BLUEFIELD	W8MOP	144.89	145.49	A
BRISTOL	K4ILW	146.07	146.67	N A
BRISTOL	WDECYZ	146.28	146.88	
BROMLEY MT	WR4ATJ	146.01	146.61	N
CHARLOTTESVILLE	WA4TFZ	146.16	146.76	
CHARLOTTESVILLE	WA4TFZ	146.325	146.925	
CHESAPEAKE	N4GSP	146.01	146.61	
CHESAPEAKE	N4SD	146.19	146.79	A
CHESTERFIELD	KA4CBB	147.96	147.36	
CLIFTON FORGE	K4QEL	147.90	147.30	N
COVINGTON	WA4HTI	146.22	146.82	N
CULPEPPER	WR4BCS	147.72	147.12	M
DANVILLE	WR4AHG	147.95	147.35	N
DANVILLE(DCC)	WB4GJG	146.325	146.925	
DANVILLE/WHT OAK	K4WQS	146.10	146.70	
DEWITT	WA4ZOZ	146.43	147.03	N
DUBLIN	KT4Z	147.78	147.18	N
DUFFLD/POWLL MT	KA4BHH	146.10	146.70	C
FAIRFAX	W4LBL	146.19	146.79	N PA
FAIRFAX	K4VYN	146.31	146.91	N PA
FALLS CHURCH	W4AQD	144.75	145.35	M
FARMVILLE	WB4NWP	146.31	146.91	N A
FINCASTLE	W4WIC	146.04	146.64	
FOREST	K4STE	146.16	146.76	A
FRANKLIN	K4SPS	147.90	147.30	N PA
FREDRICKSBURG	WB4LNT	147.615	147.015	
GALAX	N4VL	144.53	145.13	
GALAX	WA4ZIV	144.83	145.43	N
GALAX	WA4DFH	147.735	147.135	
GALAX/BRIRP MT	N4VL	147.69	147.09	EA
GATE CITY	WD4GTA	147.945	147.345	N
GRUNDY	K4HWQ	147.92	147.32	N A
GUM SPRING	KB4GX	147.87	147.27	N
HAMPTON	K4UMI	145.23	PKET	N
HAMPTON	K4DHO	146.13	146.73	
HAMPTON	K4UMI	146.34	146.94	N T
HAYSI	WR4AWR	147.60	147.00	N
HAZEL MT	WD4CYZ	146.235	146.835	N
HILLSVILLE	WD4BTJ	147.975	147.375	A
JONESVILLE	WA4OVC	146.31	146.91	
LEXINGTON	WA4WBD	146.07	146.67	
LEXNGTN/COLE MT	K4PQD	147.93	147.33	
LYNCHBURG	WR4AXO	146.01	146.61	N
LYNCHBURG	WA4RTS	147.795	147.195	
LYNCHBURG	W4OSH	147.975	147.375	N PA
MANASSAS	WD4JCE	144.67	145.27	M R
MANASSAS	W1CRO	146.37	146.97	PA
MARION	N4BIW	146.04	146.64	
MARTINSVILLE	AB4L	147.885	147.285	
MCLEAN	WD4IWG	147.81	147.21	M R
MT. LK/BALD KNB	K4TUE	146.31	146.91	
NEW MARKET	WB4DAK	146.025	146.625	

NEWPORT NEWS	WB4CTF	147.765	147.165		PA
NEWPORT NEWS	WA4OHX	147.975	147.375		PA
NORFOLK	NE4D	146.10	146.70		
PARKSLEY	WA4TVS	147.855	147.255	N	EA
PETERSBURG	K4SII	147.78	147.18	N	
PETERSBURG	K4ARO	147.84	147.24		TPA
PETERSBURG	K4ARO	147.99	147.39		
PORTSMOUTH	N4PR	146.25	146.85	N	
RADFORD	KC4WA	147.645	147.045		
RICHMOND	W4SQT	144.83	145.43		
RICHMOND	WB4QEY	146.04	146.64	N	
RICHMOND	WR4ACW	146.28	146.88		PA
RICHMOND	W4ZA	146.34	146.94		T
RICHMOND	WA4ECM	147.66	147.06	N	
RICHMOND	N4HB	147.735	147.135		
ROANOKE	WB4QOJ	146.145	146.745		LPA
ROANOKE	WR4AHT	146.34	146.94	N	AO
ROANOKE/POOR MT	W4CA	146.385	146.985		L
SALEM	W4PDL	146.28	146.88	N	
SOUTH BOSTON	WD4LBM	146.46	146.06		
STAUNTON	WA4ZBP	146.25	146.85		
STAUNTON	W4WRN	147.645	147.045	N	
STERLING	WA4TXE	146.115	146.715	M	
SUFFOLK	WR4AKS	146.40	147.00	N	PA
TAZEWELL	WD4DZE	147.75	147.15	N	
VIRGINIA BEACH	WA4KXV	146.37	146.97		PA
VIRGINIA BEACH	WA4SBC	147.645	147.045	N	
WARRENTON	WB4FJT	147.765	147.165	M	
WARSAW	WA4UAF	147.93	147.33		
WAYNESBORO	W4BLD	147.63	147.03		
WAYNSBR/AFTON MT	W4PNT	147.675	147.075		
WILLIAMSBURG	W4NTG	146.07	146.67		
WINCHESTER	W4RKC	146.22	146.82		
WISE/HIGH KNOB	K4AXO	147.81	147.21		
WOODBRIDGE	WB4FQR	147.84	147.24	M	A
WYTHEVILLE	WA4EMS	146.175	146.775	N	

220 MHZ

ALEXANDRIA	WA4CCF	223.22	224.82	M	
DAN/WHT OAK	K4OAK	223.16	224.76	N	
FAIRFAX	K4GCM	222.34	223.94	N	
FALLS CHURCH	N4GHP	222.22	223.82	M	
FRIES	WA4DFH	222.74	224.34		
ROANOKE/POOR MTN	WB4DBB	223.34	224.94		

440 MHZ

ALEXANDRIA	WR4AAG	439.25	426.27	M	V
ALEXANDRIA	W4HFH	449.60	444.60	M	
ANNANDALE	WR4AQG	444.85	449.85	M	PL
ARLINGTON	K8ZOA	449.00	444.00	M	L
CHARLOTTESVILLE	WA4TFZ	449.25	444.25		
COVINGTON	WA4HTI	447.25	442.25	N	
FAIRFAX	K4JYF	444.75	449.75	N	
FALLS CHURCH	WB8CRK	449.45	444.45	M	L
FINCASTLE	W4WIC	448.75	443.75		
HAMPTON	K4UMI	448.65	443.65	N	
LEXNGTN/COLE MT	K4PQD	449.15	444.15		
LYNCHBURG	WB4DBB	449.35	444.35		L
LYNCHBURG	K4HEX	449.50	444.50	N	RB
MANASSAS	WD4JCE	444.225	449.225	M	L
PETERSBURG	K4ARO	449.85	444.85		
RICHMOND	K4ARO	449.50	444.50		
ROANOKE	WR4AFE	447.75	442.75	N	
ROANOKE/POOR MT	W4CA	442.50	447.50		L
TYSONS CORNER	WB6GUS	448.50	443.50	M	
VIRGINIA BEACH	WA4KXV	449.95	444.95		
WAYNESBORO	W4BLD	449.30	444.30		PA
WAYNSBR/AFTON MT	W4BLD	449.05	444.05		
WINCHESTER	W3CSG	447.00	442.00	M	
WOODBRIDGE	WB4FQR	444.90	449.90	M	

6-METERS

ABINGTON	WR4ATJ	52.01	53.01	M	L
ALEXANDRIA	WA4CCF	52.13	53.13	M	P
DANVILLE(DCC)	WB4GJG	52.13	53.13		
FAIRFAX	KA4DCS	52.58	52.48	M	
LEXNGTN/COLE MT	K4PQD	52.01	53.01		L
LYNCHBURG	WB4DBB	52.15	53.15		
NORFOLK	W4NV	53.525	52.525	N	
NORTN/HIGH KB	K4LSP	52.01	53.01	N	
SOUTH BOSTON	WB4YWH	52.07	53.07	N	C

WEST VIRGINIA REPEATERS

2-METERS

ALDERSON	WR8AKZ	146.13	146.73	N	
BECKLEY	KC8FW	144.77	145.37	N	LA
BKLY/FLAT TOP MT	K8BO	146.25	146.85	N	A
BLUEFIELD	W8MOP	144.89	145.49		A
BOLT MT	WB8LVH	144.57	145.17	N	L
BRIDGEPORT	WR8ALC	147.705	147.105	N	EA
BRIDGEPORT	K8VNQ	147.72	147.12		EAL
BUCKHANNON	K8WYH	146.25	146.85	N	
CHARLESTON	WR8AER	146.22	146.82	N	
CHARLESTON	WB8CQV	146.28	146.88	N	
CLARKSBURG	WB8ZVS	146.22	146.82		A
CLARKSBURG	WB8DTM	146.50	52.525	N	RB
COAL MTN	WB8KAD	146.12	146.72	N	A
COAL MTN	WB8OEC	147.75	147.15	N	
COTTAGEVILLE	WR8AKV	146.31	146.91	N	
DUNBAR	K8VKI	147.72	147.12		
ELKINS	WR8AOH	146.04	146.64	N	
FAIRMONT	W8SP	146.31	146.91		
FRANKLIN	W3RUA	147.945	147.345		
GRAFTON	K8VNQ	147.975	147.375		L
HUNTINGTON	WB8EZR	146.04	146.64	N	
HUNTINGTON	WR8AGH	146.16	146.76	N	A
HUNTINGTON	KA8BKX	147.90	147.30	N	
JUMPING BRANCH	WD8OGY	146.355	146.955	N	
KINGSTON/LICK KB	W8FG	144.87	145.47		
LAYLAND/MANN MT	N8BZS	144.71	145.31	N	L
LEON	WB8NMT	147.78	147.18	N	
LOGAN	WD8KWC	144.63	145.23		
LOGAN	WA8ZLR	146.09	147.11	N	O
LOGAN	WD8DRV	146.37	146.97	N	
MADISON	KA8JYR	146.06	147.06	N	TA
MARMET/BEE MT	N8DBN	144.55	145.15	N	
MARTINSBURG	WB8VUZ	147.855	147.255	N	
MCMECHEN	WA8ULB	146.31	146.91		
MCMECHEN	N8CFX	147.75	147.15		
MORGANTOWN	K8LG	144.83	145.43		L
MORGANTOWN	WB8YZT	146.085	147.955	N	
MORGANTOWN	W8CUL	146.16	146.76		LPA
MULLENS	WR8AKX	147.63	147.03	N	LA
NEW MARTINSVLLE	WR8ABY	146.34	146.94	N	
OAK HILL	W8GH	146.19	146.79		PA
PARKERSBURG	WA8CRW	146.37	146.97		PA
PARKERSBURG	WD8AXY	147.99	147.39		
PARSONS	K8VNQ	144.73	145.33		EAL
PIE HORSE MT	N8APH	144.67	145.27	N	A
POINT PLEASANT	W8KNM	147.66	147.06	N	
PRINCETON	WB8NRK	146.46	147.06		A
RAVENSWOOD	WD8JNU	146.07	146.67		
RAVENSWOOD	WD8JNU	146.10	146.70		R
RICHWOOD	K8VKB	146.34	146.94		
SCOTT DEPOT	K8SLI	147.87	147.27	N	A
SPENCER	WA8SAK	146.01	146.61	N	
ST ALBANS	WB8GDY	146.40	147.00		
ST ALBANS	K8BCH	147.975	147.375		R
TERRA ALTA	WB8PHU	147.60	147.00		PA
WEIRTON	KC8JN	146.34	146.94		A
WELCH	WB8SXZ	144.85	145.45		
WHEELING	W8YFX	144.59	145.19	N	
WHEELING	W8JDH	146.16	146.76	N	

220 MHZ

HUNTINGTON	KA8BKX	222.54	224.14	N	
KINGSTON/LICK KB	W8FG	223.14	224.74		

440 MHZ

KINGSTON/LICK KB	KA8EMX	449.80	444.80	N	
MORGANTOWN	K8LG	449.70	444.70		L
MORGANTOWN	W8CUL	449.80	444.80		PA

SOUTH CAROLINA REPEATERS

2-METERS

AIKEN	N4ADM	147.885	147.285	O
ANDERSON/LOCAL	N4SZ	146.37	146.97	PA
ANDSN/SASFRAS MT	W4FVV	146.19	146.79	
BAMBERG	WA4DFP	144.73	145.33	N
BEAUFORT	KB4CY	146.01	146.61	
CAROWINDS	AA4SC	147.78	147.18	N
CHARLESTON	K4ILT	146.16	146.76	N PA
CHARLESTON	W4IVE	146.34	146.94	N T
CHARLESTON	K4LWS	147.90	147.30	
CHARLSTN/LDSN	WB4LET	147.87	147.27	PA
CHERAW	KA4ABW	147.735	147.135	PA
COLUMBIA	N4EOY	146.07	146.67	T
COLUMBIA	K4AVU	146.28	146.88	
COLUMBIA	K4LNU	146.34	146.94	
COLUMBIA	WB4VLY	147.93	147.33	O
COLUMBIA	K4LNU	147.96	147.36	PA
DILLON/PEE DEE	NN4N	146.145	146.745	EA
FLORENCE	W4ULH	146.25	146.85	
FLORENCE	WA4ISM	146.37	146.97	PA
FT JACKSON	WB4OCB	146.16	146.76	
GASTON	WB4NEP	144.61	145.21	PA
GEORGETOWN	WD4DMI	147.975	147.375	
GOOSE CREEK	WD4NUN	144.85	145.45	T
GOOSE CREEK	W4NAT	147.78	147.18	N
GREENVILLE	W4AZT	146.10	146.70	A
GREENVILLE	K4LEO	147.375	147.975	N PA
GREENVILLE	WR4	147.675	147.075	N PA
GREENWOOD	WB4UGA	147.765	147.165	PA
GREER	W4IQQ	146.34	146.94	N
GRNVLE/CSRS HD	W4NYK	146.01	146.61	
GRNVLE/PARIS MT	W4NYK	146.22	146.82	PA
HODGES/GREENWOOD	KB4YF	144.53	145.13	N
INMAN	WD8OXE	144.87	145.47	
LANCASTER	W4PAX	146.10	146.70	
LANCASTER	WB4BGF	147.84	147.24	
LAURENS	WA4UZA	146.25	146.85	N A
LEXINGTON	WR4AGK	147.255	146.835	N
LEXINGTON	KA4FEC	147.99	147.39	
LITTLE MT.	K4AVU	147.81	147.21	
LONG MT	WA4JRJ	147.87	147.27	N
MARION	W4YLT	146.40	147.00	N EA
MONCKS CORNER	WA4DDK	147.75	147.15	N
MYRTLE BEACH	WD4JMT	146.01	146.61	A
MYRTLE BEACH	WA4YEE	147.72	147.12	N
MYRTLE BEACH, N	WA4JYR	147.63	147.03	N PA
N. AUGUSTA	K4FKJ	146.13	146.73	
N. AUGUSTA	K4VF	146.34	146.94	
ORANGEBURG	WR4AQY	147.69	147.09	N A
PICKENS	WB4YXZ	146.40	147.00	A
PROSPERITY	WB4OCB	147.84	147.24	
ROCK HILL	KA4RFA	144.71	145.31	N LPA
ROCK HILL	K4YTZ	146.325	146.925	PA
ROCK HILL	K4YTZ	146.43	147.03	PA
ROCKY SPUR	KS4I	147.885	147.285	
SAVANNAH(GA)	W4HBB	146.28	146.88	
SAVANNAH(GA)	W4HBB	146.37	146.97	A
SIMPSONVILLE	WA4LDP	146.13	146.73	
SIMPSONVILLE	WA4SDT	147.75	147.15	N R
SPARTANBURG	WD8OXE	147.69	147.09	PA
SUMMERVILLE	WR4AUV	146.19	146.79	N
SUMTER	WB4AFR	146.04	146.64	
SUMTER	WA4UMU	147.615	147.015	A
SUMTER	W4VFR	147.66	147.06	N
WHITE HALL	W4BWZ	146.31	146.91	

6-METERS

PICKENS	WB4YXZ	52.41	53.41	C
PICKENS/CSRS HD	WB4QHF	52.525	RMT.BS	CBR

440 MHZ

CHARLESTON	N4SC	449.10	444.509	N T
COLUMBIA	KC4YI	449.10	444.10	
ROCK HILL	KA4RFA	449.75	444.75	N LPA

220 MHZ

COLUMBIA	N4EOY	222.30	223.90	
COLUMBIA	N4EOY	223.30	224.90	PRB
EASLEY/SASFRS MT	KJ4X	222.46	224.06	
PICKENS	WB4QHF	222.80	224.40	P
PICKENS/CSRS HD	WB4QHF	222.54	224.14	

GEORGIA REPEATERS

2-METERS

ADAIRSVILLE	WB4LRA	146.085	146.685	
ALBANY	WR4ADM	146.10	146.70	
ALBANY	W4MM	146.13	146.73	
ALBANY	WR4ANB	146.22	146.82	
AMERICUS	WR4AQH	147.87	147.27	
ASHBURN	WA4NTF	144.63	145.23	
ASHBURN	K4QT	147.285	147.885	
ATHENS	WA4BKF	146.13	146.73	
ATHENS*	K4TQU	147.375	147.975	
ATLANTA	NC4E	144.69	145.29	
ATLANTA	WB4LBM	144.71	145.31	
ATLANTA	WR4ABE	146.04	146.64	T
ATLANTA	W4DOC	146.22	146.82	
ATLANTA	WR4ABC	146.37	146.97	
ATLANTA	WR4ARK	146.40	147.00	PA
ATLANTA	K4SMX	147.795	147.195	
ATLANTA	W4LUZ	147.855	147.255	
ATLANTA/BELL*	W4PME	144.81	145.41	
ATLANTA/GA TECH*	W4AQL	144.55	145.15	
AUGUSTA*	W4ALK	147.72	147.12	
AUGUSTA*	N4BMA	147.78	147.18	R
BALDWIN	WD4NHW	147.78	147.18	
BLAIRSVILLE	WA4EZN	147.70	147.10	
BRUNSWICK	K4TVE	146.13	146.73	
BUFORD	WD4JXR	147.075	147.675	P
BUFORD	WD4JXR	147.87	147.27	
CANTON	KE4PN	144.67	145.27	
CARROLLTON	W4FWD	146.04	146.64	
CEDARTOWN	W4CMA	147.72	147.12	
CLEVELAND	K4FOW	144.69	145.29	
CLEVELAND	K4FOW	147.015	147.615	
CLOUDLAND	N4AHE	147.225	147.825	
COHUTTA-RTTY	W4KAU	146.46	147.06	R
COLUMBUS	WA4QHN	146.01	146.61	
COLUMBUS	N4BJZ	146.28	146.88	
CONYERS	WB4SLZ	147.21	147.81	
COVINGTON	WA4ASI	146.925	146.325	
CUMMING	K4BYK	147.75	147.15	PA
DALLAS	K4DVJ	146.25	146.85	
DALTON*	N4BZJ	144.63	145.23	
DALTON*	N4BZJ	144.65	145.25	
DALTON*	KA4WIZ	147.315	147.915	
DECATUR*	W4VTA	144.51	145.11	
DOUGLASVILLE	KB4EO	147.96	147.36	
DUBLIN	WA4HZX	147.96	147.36	
FAYETTEVILLE	K4UWN	146.685	146.085	
FOLKSTON	K4DMK	146.19	146.79	
FOREST PARK	K4KQK	144.65	145.25	
FORSYTH	WR4AQA	147.315	147.915	
GAINESVILLE	WD4IWJ	146.31	146.91	
GAINESVILLE*	W4NSO	146.07	146.67	A
GRIFFIN	WR4AIV	146.31	146.91	
GRIFFIN	WR4AEA	146.43	147.43	
GRIFFIN*	WB4GWA	144.79	145.39	
HAMILTON	WB4ULJ	144.59	145.19	
HAMILTON	N4GDG	146.835	146.235	
HAMILTON-RTTY	K4ACH	144.77	145.37	
HAMPTON	WA4DIW	144.57	145.17	
HAPEVILLE	WR4ABN	147.63	146.03	
HARTWELL*	KY4T	146.895	146.295	A
IRWINTON	WB4NFG	147.84	147.24	
JASPER	W4OOM	146.10	146.70	
JESUP	WA4EQL	146.07	146.67	
JONESBORO	WA4DIW	144.57	145.17	
JONESBORO	WA4OGE	144.73	145.33	

JONESBORO	W4BOC	144.85	145.45	
KENNESAW	WB4UPC	144.83	145.43	
LAGRANGE	WR4	146.40	147.00	
LAGRANGE	WB4BXO	147.93	147.33	
LYONS	K4HAO	146.22	146.82	
MACON	W4BKM	146.06	146.66	
MACON	K4ICT	147.66	147.06	T
MARIETTA	WB4KJB	146.13	146.73	
MARIETTA	W4BTI	146.28	146.88	
MARTINEZ	WB4YAT	144.89	145.49	
METTER	W4TYM	147.645	147.045	
MILLEDGEVILLE	KA4WDF	144.51	145.11	A
MILLEDGEVILLE	WB4DOJ	146.10	146.70	
MOULTRIE	WD4KOW	146.19	146.79	
NEWNAN*	K4SEX	144.53	145.13	
NEWNAN*	K4SEX	146.19	146.79	
PRESTON	W4TOV	146.385	146.985	
QUITMAN	WA4NKL	146.28	146.88	
RINGGOLD	WR4ABZ	146.115	146.715	
RIVERDALE	WA4EPK	144.61	145.21	
ROME	W4VO	146.34	146.94	
ROME	K4HNM	147.30	147.90	
ROSSVILLE	W4VAG	147.81	147.21	
ROSWELL	N4CLA	144.87	145.47	
SANDY SPRINGS	WB4CPL	144.75	145.35	
SAVANNAH	K4NLX	144.63	145.23	
SAVANNAH	K4NLX	146.10	146.70	PA
SAVANNAH*	W4HBB	146.28	146.88	
SAVANNAH*	W4HBB	146.37	146.97	A
SMYRNA	WA4YUR	144.61	145.21	
STATESBORO	K4MEF	147.81	147.21	
STONE MTN	W4BOC	146.16	146.76	
SVR CRK/MT ALTO	K4HNM	147.90	147.30	
SWAINSBORO	K4VYX	146.19	146.79	
THOMASTON	K4IMK	147.99	147.39	
THOMASVILLE	K4UFM	147.66	147.06	
TOCCOA*	KA4DIP	147.93	147.33	PA
VALDOSTA	W4APS	146.16	146.76	
VALDOSTA	WA4SMH	147.135	147.735	
VIENNA	WA4RWS	144.89	145.49	
WARNER ROBINS	WB4BDP	146.01	146.61	
WARNER ROBINS	W4HON	146.25	146.85	A
WARNER ROBINS	W4MST	147.015	147.615	R
WAYCROSS	WR4AMK	146.04	146.64	
WRIGHTSVILLE	WA4RVB	146.34	146.94	
220 MHZ				
ATLANTA	KK4C	223.22	224.82	PA
CANTON	WB4UPC	222.34	223.94	
CANTON	WB4UPC	223.06	224.66	
KENNESAW	WB4UPC	222.52	224.12	
KENNESAW	WB4UPC	223.34	224.94	
440 MHZ				
ALBANY	WA4GKI	439.25	427.25	V
BUCKHEAD	WA4YNZ	449.975	444.975	T
COLUMBUS	WA4QHN	449.20	444.20	
KENNESAW	WB4IXF	449.50	444.50	
STONE MTN	W4BOC	444.25	449.25	
10-METERS				
ATLANTA*	KE4IO	29.52	29.62	
6-METERS				
MARIETTA	WB4UPC	53.05	52.05	

***CVRA-SERA Full Member Repeater**

EAST KENTUCKY REPEATERS

2-METERS				
ASHLAND	WR4ACQ	146.34	146.94	
ASHLAND	WR4ALH	147.84	147.24	
BETSY LAYNE	WA4YCU	146.035	146.635	
BLACK MOUNTAIN*	NQ4C	147.94	147.34	
ELKHORN CITY	WR4AWR	147.60	147.00	EAO
GRAYSON	N4BDX	144.79	145.39	
HAZARD	K4VHF	146.07	146.67	
JENKINS	WD4PDJ	147.99	147.39	
LOUISA	WA4SWF	146.13	146.73	
MAYTOWN	N4ESP	146.28	146.88	O
MOREHEAD	K4GFY	146.31	146.91	
PANTSVILLE	WB4PLK	147.63	147.03	
PIKEVILLE	KA4BQH	144.59	145.19	O
PIKEVILLE	N4ETG	146.19	146.79	PA
PIKEVILLE	KA4BQH	146.25	146.85	
PRESTONSBURG	K4ICN	144.69	145.29	

***CVRA-SERA Full Member Repeater**

CVRA-SERA FINANCIAL REPORT AS OF SEPTEMBER 30, 1983

	1983	1982
REVENUES		
Advertising	$ 4,951.75	$ 3,756.45
Associate membership dues	7,890.00	8,204.00
Full membership dues	1,941.00	887.00
Other	16.25	336.46
	$ 14,799.00	$ 13,183.91
EXPENSES		
Journal mailing	$ 1,817.98	$ 979.47
Journal printing	10,833.61	9,446.80
Miscellaneous expenses	-0-	318.63
Directors meetings	600.51	726.81
Offices expenses	106.49	116.44
Amortization of copy machine	448.00	-0-
Postage other than journal	204.74	317.82
Printing other than journal	995.69	666.03
Telephone	351.46	388.45
	$ 15,358.48	$ 12,960,45
REVENUE OVER (UNDER) EXPENSES	($ 559.48)	$ 223.46
Balances, beginning of year		
Expenses advanced	$ 700.00	$ 700.00
Cash in hand	1,135.60	3,314.91
Invested in copy machine	2,240.00	-0-
	$ 4,075.60	$ 4,014.91
EQUITY TO ACCOUNT FOR	$ 3,516.12	$ 4,238.37
Less: Expenses advanced	$ 800.00	$ 700.00
Invested in copy machine	1,792.00	2,240.00
	$ 2,592.00	$ 2,940.00
CASH IN BANK	$ 924.12	$ 1,298.37

Ray Adams, N4BAQ
Treasurer

In Memory of—

Someone Else

We were saddened this month to learn of the death of one of the Society's most valuable members, Someone Else. The vacancy left by Someone's death will be difficult to fill. Else did more than a normal person's share of the work. Whenever leadership was mentioned, this person was looked to for guidance and results: "let Someone Else work with that group."

Whenever there was committee work to be done, project to work on, or a meeting to attend, one name was at the top of everyone's list, "Let Someone Else do it." Someone Else was a wonderful person, but one person can only do so much and unfortunately everyone Else is gone! Who will do all the things Someone Else did? When you are asked to get involved in your Society do so. Remember, we can't depend on Someone Else any more.

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from our VA Ham news

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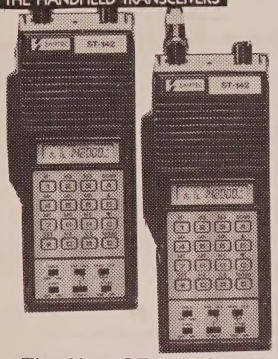

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- **The ST-142 automatically picks up where you left off by remembering the last operating frequency and set of conditions in progress at turn off, and retains them for next turn on.**

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ST-4QC Base Charger & Power Supply	69.95
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SW-WC Replacement Wall Charger	9.95
ST-EC Charge extender (Chg. batt outside radio)	4.95
ST-500B 500 mah Battery pack	29.95
SM-3 Speaker Microphone w/lapel clip	35.95
ST-LC(SS) Leather Case w/Belt Clip & Shoulder Strap	35.95
ST-SS Shoulder Strap for Leather Case	5.95
ST-BC Belt Clip with Radio back	12.95
ST-RD Replacement 2-meter rubber duck	10.95
MS-50S Remote Speaker w/mini. & Sub mini plgs	15.95
SS-32A Synth. Sub-Audible Tone Encoder	32.95
SS-32B Synth Tone Burst, Tone Encoder	32.95
ST-EMC External Microphone 6-pin connector	9.95
ST-HA1 Headset Boom Mic & Adapt. for Santec H/T	39.95

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Paid up Flea Market Reservations accepted until Jan 10.
Commercial Exhibitors deadline - Dec. 30. Booth Prices reduced. Call or write. Booths include backwall space or backdrop and divider. One table per space. Additional tables may be rented.

Building will be available Saturday - noon. Armed security guard all night. Trucks may unload in the building until 11 p.m. Saturday.

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or write
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Talk-in or information 146.28/88 - 146.34/94

Young Hams Airmobile Up and Down East Coast

Keith Nelson, KB4DJU and George Dougherty IV, N4HHF test out their handhelds while waiting for their dads to go flying and a little "aeronautical mobile" operation. Keith is also active in CAP.

What do two young hams do while their dads, who happen to fly airplanes, to while away the time on the way to the Grandparents? George Dougherty IV (N4HHF), 13, of Lexington; and Keith Nelson (KB4DJU), 13, of Advance, armed with their Santec 1200's hammed, airmobile, their way across the coastal states. Therefore, they bugged their sisters less than most older brothers!

George, is an 8th grader at Sheets Memorial Christian School in Lexington and has had his license since he was 11. His dad, George III (N4HHG), is on the instructional staff at Missionary Aviation Institute, Mocksville, NC and flew his family to visit the grandparents in Vineland, NJ. George IV's traffic was, for the most part, with his uncle, W2SUH, who kept the grandparents advised to the minute of the family's progress. The airport manager at Vineland still has not figured out how the grandparents arrived at the moment the family landed! He also talked to a Canadian mobile station touring the eastern US and several other 2 and 4-land stations. George is working some CW and looking forward earning the general. He also plays soccer on the school team and trumpet in the band.

Keith, an 8th grader at North Davie JHS near Mocksville, got his license about a year after George, motivated by a "younger kid getting his!" His dad, Holli (KB4AKM) and mom (KB4ECQ) were unable to equal that challenge. Keith's father is also a flight instructor and does much of the pilot examination for licenses at Missionary Aviation. Keith's grandparents are split between Piseco Lake in NY State's Adirondacks and Long Island. He talked to about 50 stations in the 1, 2, and 4 call areas, most on 146.52. The QTH question caused the most cockpit hassle! His mom stayed busy trying to convert our airborne equipment's position reports to a form understandable to those on the ground. Keith is also a bandsman, active in scouting and in Civil Air Patrol.

In both cases, the boys used HT's with a rubber duck from the backseat of the Cessna light airplane. Both are active in the Davidson and Forsyth County ARES and Keith is involved in Civil Air Patrol communications. Both are fishermen, and they may be heard from time to time talking about teachers (ugh), homework (ugh ugh), school sports, or any of a variety of other topics of interest to a 13-year-old boy on the Lexington (NC) 31/91, the Winston 04/64, or the Roaring Gap 22/82 machines.

Official CW Copying Record

The record for the fastest copying of CW belongs to Ted R. McElroy at 75.2 words per minute. McElroy accomplished this fantastic feat in a tournament at Asheville, North Carolina on July 2nd, 1939.

"RTTY on Two"...Follow-up

—by: Ted Wolfe WD4KHL

To follow up last issue's "RTTY on Two" article, I've received no mail so far with comments pro or con on operating RTTY over the local club's repeater. But from our area I can report that Dennis Jennings, KD8X, in the Beckley area, did move his MSO (mailbox) from HF over to 2-meters in late August.

The Appalachian Repeater Association welcomed the experimental use of RTTY on the Bolt Mtn 145.17 wide area machine for mailbox use. Voice communication still has priority, and RTTY is disallowed during the repeater's busiest hours -- 7:00 to 9:00 a.m. and 4:00 to 8:00 p.m. Outside those hours experimental use of RTTY is approved. As I write this, the mailbox is operating with 110-baud ASCII.

Doug Sweeney, N8AJC, South Charleston, commented to me that he'd like to see a new feature in the Journal. I therefore pass along Doug's suggestion to Journal Editor Wayne Williams, K4MOB, and to the membership. Doug would like to see pictures of some typical ham shack layouts. He'd like to see how other hams organize their equipment and operating position. If enough of you feel the same way, let Wayne--the Editor--know. Then be prepared to submit some good black and white photos of your shack. If Wayne likes the idea, he'll add a note to the effect of what size photos to submit.

With reference to RTTY equipment, several hams in the area here have ordered the Microlog AIR-1 board for the Vic-20. It's a plug in board with the software (program) for a CW/RTTY operation on it, plus an on-board Terminal Unit. It's still too soon to have a user report from any of those who've ordered the units. The same goes for the MFJ Terminal Unit. I keep getting calls on 2-meters asking about the MFJ. I've never used one and no one around here yet has one to report on.

Those of you with experience with either might like to write up a review on them and relate your experiences and your evaluation. An unbiased opinion here might help some other ham who is interested decide on which unit to buy to get active on computer-assisted CW/RTTY.

For those of you interested in AMTOR, check the latest ads for an AMTOR program plug in board for the Vic-20. I won't cite the magazine where I noted the ad. Let those manufacturers advertise here in the 2-meter oriented Journal.

However, I will mention that recent issues of 73 Magazine have articles on home brewing some of the gear needed to get into Packet Radio. I wish I had the money to pursue all those various aspects of Amateur Radio, but I don't. Still, I want you to be aware of what others may be doing. It may kindle your interest and create another area for you to investigate and become involved in.

G.I.S.M.O.

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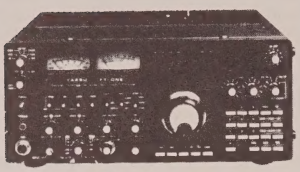
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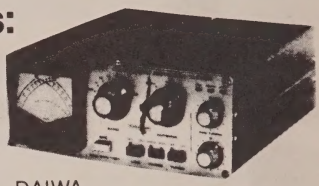
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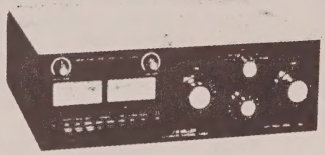
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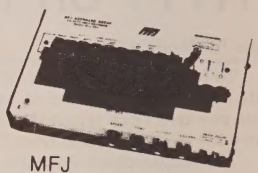
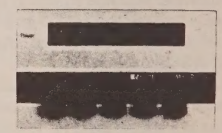

MFJ

DRAKE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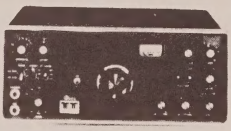
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TALK IN: 147.69/09 and 144.77/145.37

Home At Last?

—by Dick Giddish, WD4RTT

The 63-03 machine WD4RTT owned by the Lakeway Amateur Radio Club of Morristown, Tennessee has been relocated to Clinch Mountain, 10 miles north of Morristown. A concrete block house was constructed and a 60 foot tower installed. The Spectrum Machine, Phelps Dodge Duplexers, Shakespear Antenna were moved from the old Crockett Ridge site on August 27, 1983.

The repeater began life about 8 years ago as the WB4OAH machine located on English Mountain, 30 miles south of Morristown, and was later moved to Crockett Ridge in Morristown, being replaced on English Mountain by the 825-225 machine by WB4OAH.

It operated as WB4OAH in Morristown until October 1981, at which time the club purchased a new Spectrum machine and changed the call to WD4RTT. Since the start of the WD4RTT machine it has been on and off Crockett Ridge on several occasions due to site problems of one type or another. The most recent move to Clinch Mountain was the result of the Crockett Ridge site being for sale. Hopefully, 63-03 has found a permanent home on Clinch Mountain as it is a difficult job installing casters on a concrete block building and tower.

Give A Journal For Christmas

The Repeater Journal Staff has come up with an easy gift for you to give to your best friends....a great gift idea at a modest cost.

Why not give a year's membership in CVRA-SERA to someone deserving. All you have to do is find the Associate Membership application in this issue of the Repeater Journal, fill it out with your friends name, address and callsign. At the top, write "Gift from....(your callsign and name).

We'll take it from there. If your friend is already an Associate Member, we will add a year to his membership. If he has never been a member, we'll put him down for a year, and see that he gets the Repeater Journal in 1984.

To be sure your friend knows who was so nice, we will send him a special card telling him about his gift, and the name of the person who gave him the year's membership.

Don't delay, get your application and $4.00 membership fee in now, be sure to write Gift from....at the top. Then around Christmas time, we'll see that they get the announcement card.

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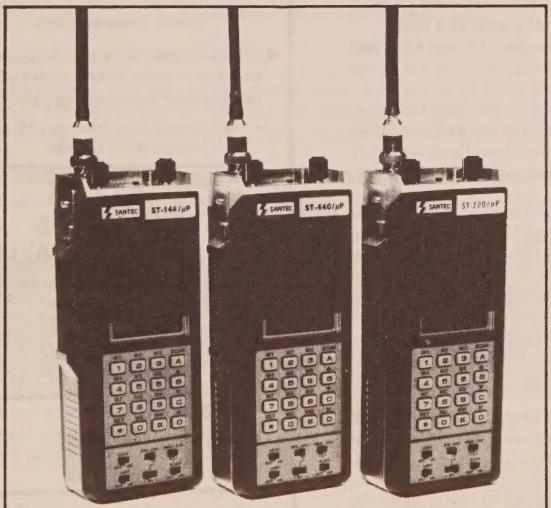
THE SANTEC TRIO



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FREQ. COVERAGE	142 — 149.95MHz	440 — 449.975MHz	220 — 224.995MHz
REPEATER OFFSETS	±600kHz	±5MHz	±1.6MHz
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Trying to Foresee The Future

Continued from Page 1

Fall Meeting 1983

At the Shelby meeting, the Directors were again urged to look into future problems on 2-meters. It was noted that our sister coordinating body to the North, TMARC was seeking advise from all over to assist in solutions to overcrowding problems.

Vice-President, Carter Cogle, K4ARO presiding at the meeting formed a committee comprised of the 5 CVRA-SERA Directors to look into the future conditions and report back for action at the Winter 1984 meeting.

What We are Doing

Presently we are drafting a letter to each member of the VRAC (ARRL Repeater Committee) asking them for possible solutions they may be aware of in their particular parts of the country. The ARRL will be asked to comment on any information they may have concerning 2-meter problems and solutions to overcrowding.

I also plan to petition the VRAC to recommend to the FCC through ARRL to consider adding additional repeater channels in the 2-meter sub band.

All of these things are being done from a coordinators viewpoint. The question still remains unanswered, "What do existing and future repeater owners think we should do?"

Present & Future Repeater Owners

I would like to drive one point home to all present and future 2-meter repeater owners...We have a crowding problem, we have got to make room for more repeaters, because they are surely coming.

Present repeater owners certainly have a right to feel that no one should put a machine on their frequency they have used for years and cause interference. But we must also respect the rights of potential repeater owners.

Why Any More Repeaters?

Presently there are about 7,000 licensed Amateurs in North Carolina (to give an example). If **every** one of them operated 2-meter FM, the repeaters across the State numbering over 110 would only average about 61 people per repeater. Obviously less than half the licensed hams in the state are on 2-meters, bringing the average down to about 30 people per repeater.

For some dumb reason, many clubs, many individuals feel they need a repeater privately for their own group, even though there may be 15 other machines sitting around 80% of the time not being used that they can access with an H/T. Many times in the past new repeaters come on as a result of a split in a club.

A third problem. We have clubs who own multiple repeaters. I know for a fact of some clubs with as little as 50 members, owning as many as 3 or 4 2-meter repeaters and more on 220 and 440 mHz.

In my area, I can hear a repeater on **every** frequency in the 2-meter band. Often when I scan the entire band, I am astonished...**no** action on **any** repeaters for long periods of time. We do have a couple of repeaters I can hear that stay fairly active during the day and evening hours, but 98% of them stay quiet more than they are used.

It kind of makes you wonder why there are so many there doesn't it. I think the problem of little usage is a result of so many machines. Operators are spread so thin, monitoring their own machine, that the majority of machiens sit unused because there is no one to talk to. Five years ago, most all machines were full of chatter every morning during drive time, and every afternoon. After dinner, they constantly were being used. But today everybody is somewhere else. I know, all my old friends I chatted with daily are scattered on 10 different machines now...rarely ever can find them.

Your Comments Are Invited

I have not written this story to stir up someone and get them upset. I just want you to begin thinking about the future. You may feel I stepped on some toes, but honestly now, aren't I telling the truth. I am concerned about 2-meters. I love the band, I love meeting so many of you at hamfests. I cherish the many good times and pleasant QSOs I've had with so many of you. But you have got to understand the situation. We are going to have to do something...soon unless we want some real overcrowding problems.

So I ask you to work with us. Give us your honest opinion. Are you willing to share the band with some more repeaters?. Is your repeater justifyable sitting on a channel?

Write in your comments and I'll see that the Directors get all the information.

Results-One Shot Net

by Dave Newman NA4L

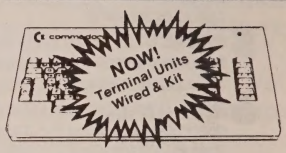
The Point Lookout Mt. 53-13 sub band repeater held a "One-Shot Net" on August 21, shortly after the new machine was placed on the air. Objective was to see who might be listening and what range was available from the 4,600 foot machine.

Thanks to all, who checked in on the "Super 13 FM" repeater. We enjoyed 155 logged check-ins despite the adverse band conditions and power outages due to heavy thunderstorms.

These check-ins represented seven states with WB4CTF in Newport News, Va., being the greatest distance.

COMMODORE 64 and VIC-20 Owners!

CW & RTTY



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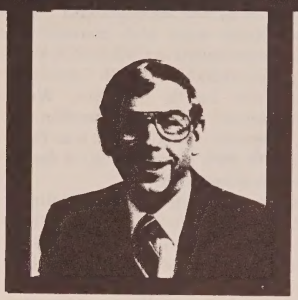

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A Record Year For Full Memberships

—by Gerry Butts
Full Membership Chairman

CVRA-SERA completed the Full Membership year with a clear majority of repeaters being recognized as Full Members in our organization. The year of Full Membership requests ended with a total of 260 applications from clubs and owners representing a total of 345 repeaters, or 54% of all repeaters.

Three states were also counted as majority represented in CVRA-SERA by repeater membership...North Carolina, Virginia and South Carolina. West Virginia missed a 50% membership by only one repeater. Next in line was Tennessee with 35% membership, a hefty increase over last year.

Even though Georgia is not recognized as a District in CVRA-SERA, 15% of that State joined as full members for 1983, a total of 18 repeaters out of 122 overall in the State. To become a District in CVRA-SERA, Georgia, to qualify, would need a representation of 10 repeater groups. A total of 15 groups applied for individual membership. According to sources in the State, they want to wait until everyone in the entire state is aware of CVRA-SERA and possibly take a vote through the Georgia Repeater Council to get a majority affirmative vote before applying for District Status in CVRA-SERA. Meanwhile, the existing Frequency Coordinators for the Georgia Repeater Council work very closely with CVRA-SERA in coordination, especially on border coordinations which might effect outlying territory in another State.

Here is a breakdown by District of the 1983 Full Membership in CVRA-SERA on file as of October 1, 1983:

STATE	MBRSHIPS	MBR RPTRS	TOTAL ALL RPTRS	MBRSHP % OF ALL
N.C.	90	119	181	66%
TN.	46	66	179	37%
VA	49	69	112*	62%
S.C.	33	39	73	53%
W.VA.	23	31	64	48%
GA.	15	18	122	15%
EKY	2	2	16	13%
ALA	1	1	??	--
total	261	345	633**	55%

***TMARC repeaters not counted, only CVRA-SERA territory repeaters counted.**

****Total repeaters on the air for 5 District only, TMARC in Va. not counted.**

OVERALL% OF FULL MEMBERSHIP IN 5 DISTRICTS (633 **rptrs .. 345 mbrs**) - 55%

Send Inquires to Proper Person

If your dishwasher was broken you wouldn't call in an auto mechanic. Likewise, check your Journal carefully and send the right person correspondence. The treasurer cannot handle coordination. The President doesn't handle Full Membership . . . etc. . . . etc. . . .

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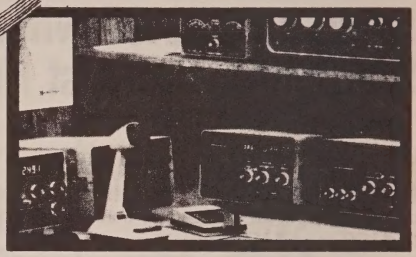
THE IMPORTANT CATALOG FOR THE ACTIVE HAM



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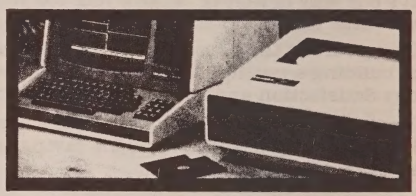

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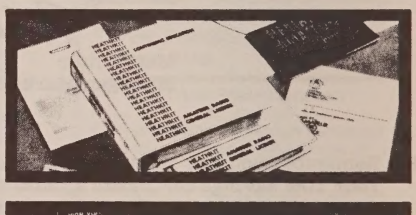

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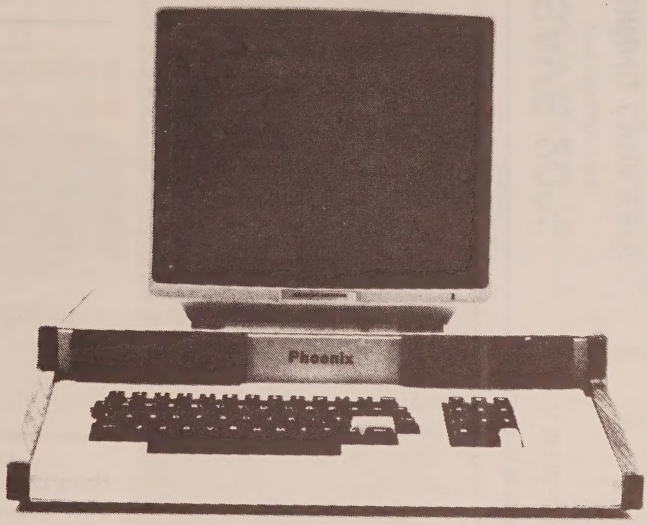

Basic $599 kit (not shown) includes:

- Software compatibility with TRS-80 Model III and Model IV, plus CP/M
- 128k RAM card (64k normal plus 64k bank-selectable), less RAM
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- CPU board, with six expansion slots
- Parts kit, including ICs, sockets, fasteners and mounting hardware
- Assembly manual

Complete $1699 kit shown includes:

- High-resolution 12" green screen monitor
- Two SSDD slimline 5-¼" floppy drives and power supplies
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- System ROM
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- 128k bank selectable RAM board (for 256K total)
- 4164 RAMs
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- Hard disk host adapter (available 10/83)
- Factory assembled units (available soon)

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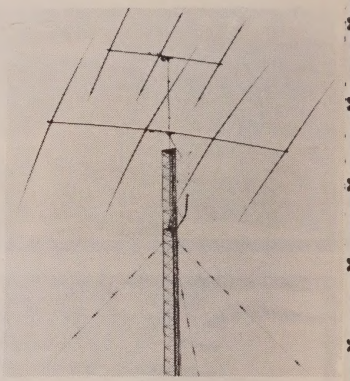

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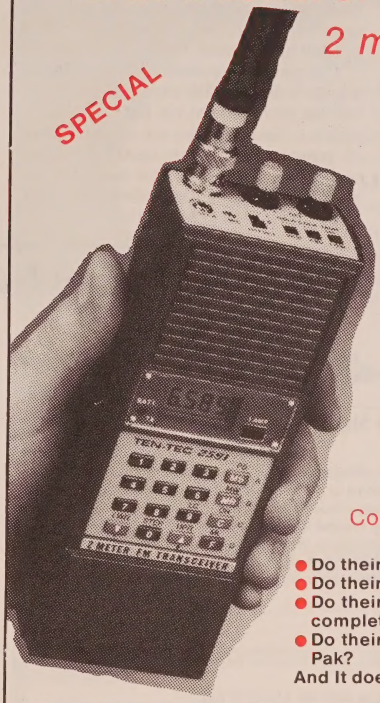

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New – Easier To Read Repeater Index

It took us a while, and finally we worked it out. After several issues of testing and trying various printers, we came up with a new printer that gave us larger, easier to read type for the Journal Repeater Index.

Lindsay, W4IZI ran us some samples last issue to test, but we could not incorporate it that quick, due to space limitations. This new daisy-wheel printer prints 6 lines to the inch instead of 8 per inch as we have used in the past. We had to add some horizontal spacing between columns to keep the length from getting out of hand.

The Repeater Journal Index is generated by computer and printed on white paper with a daisy-wheel printer, single spaced on the special Journal version. We take this printout, tape the pages together in one long sheet, cut it in 4-foot lengths and put in on a camera to reduce to the proper width to fit our page. From the resulting negatives, photoprints are made and pasted down along with the type, state names, and other parts needed in the index pages.

The new type spreads our index almost a page longer for the same information. But for you readers, we felt it would be worth it. So when you see an extra page of repeater index this issue, don't get excited-not that many new repeaters on, we just incorporated our new printer. We hope you like it! (The Editor)

Amateur In Space

Continued from Page 13

MISSION ELAPSED TIME:

Orbit	DAYS - HOURS - MINUTES	Duration:
48	2 - 21 - 58 to 2 - 22 - 13	(15 Mins.)
49	2 - 23 - 27 to 2 - 23 - 42	(15 Mins.)
56	3 - 10 - 10 to 3 - 10 - 40	(30 Mins.)
64	3 - 21 - 47 to 3 - 22 - 02	(15 Mins.)
80	4 - 21 - 36 to 4 - 21 - 51	(15 Mins.)
96	5 - 21 - 25 to 5 - 21 - 40	(15 Mins.)
112	6 - 21 - 13 to 6 - 21 - 28	(15 Mins.)
113	6 - 22 - 42 to 6 - 22 - 57	(15 Mins.)
129	7 - 22 - 29 to 7 - 22 - 44	(15 Mins.)

FCC Exam Schedule Cut Short for 1984

According to Jerry Freeman, engineer-in-charge of the Norfolk office, FCC, the Commission will administer Amateur and Commercial examinations only once each quarter at the Regional offices during 1984. Previously the Norfolk office gave examinations one day each week, with no appointment necessary.

He said effective January 1, 1984, this will be the case nationwide, due to cutbacks in the FCC operating budget. He said the examination dates will be announced later for each quarter, and will be given by appointment only.

Only one examination date will be scheduled for Greensboro and Charlotte next year to be conducted by the Norfolk office personnel.

Your Part In The Nomination Process

As time for election of new officers nears for CVRA-SERA, the nominating committee is working on their slate of nominees. However, YOU as a Full Member (a repeater representative named in your Full Membership application for 1983) have a right to nominate anyone of your choosing.

On this page is a nomination form for your use to place a person in nomination for the office of President, Vice-President, Secretary or Treasurer. The following rules **must** be observed:

(1) You must be a Full Member

(2) Your nominee must be a Full Member

(3) You must obtain signatures of three other full members to make your nomination valid.

(4) Nomination must be in the hands of our secretary no later than November 30, 1983.

Please read our Nominating committee report elsewhere in this issue of the Repeater Journal. Remember, you as a Full Member of CVRA-SERA have a right to nominate officers in the organization. Associate membership cannot.

CVRA-SERA OFFICER NOMINATION FORM

To CVRA-SERA Secretary:

The below named person(s) are nominated to office(s) listed below. The persons nominated have been contacted and have expressed a desire to serve if elected. The nominee is a FULL MEMBER of CVRA-SERA and is eligible to hold office in the organization. It is understood that this nomination from the floor, signed by myself and three other full members will be added to the nominating committee's list of nominees. If this nomination is the only one submitted for this office, that person shall be elected to the office. If more than one is nominated for any one office, an election will be held by written ballots mailed to every full member of CVRA-SERA.

Office person is nominated for _____
President, Vice President, Secretary or Treasurer

If more than one nominee, use xeroxed copy or simular sheet of paper.

Name of nominee _____ **Call** _____

Address _____ **Phone** _____

Is A representative of _____ **repeater (a full member)**
(Call-City-Freq)

Person has been contacted and has agreed to serve to best of his ability if elected to the office nominated ( ) Yes

Include brief Biographical sketch of nominee and his achievements in Amateur Radio and /or CVRA-SERA. (Use separate sheet of paper)

This nomination certified by me _____ **Call** _____

member of repeater _____**, a full member of CVRA-SERA.**

Three other full members:

_____ **call** _____ **repeater** _____

_____ **call** _____ **repeater** _____

_____ **call** _____ **repeater** _____

Other full members must sign their signature personally.

Mail This form with attached biography to arrive No later than November 30, 1983 to:
MAXINE BARRETT, CVRA-SERA SECRETARY, BOX 212, HICKORY RD., LOOKOUT MT., TN. 37350

We'll Be Visiting These Shows Now thru May!

Nov. 6	Concord, N.C.
Nov. 26-27	Greensboro, N.C.
Jan. 15	Richmond, Va.
Feb. 19	Elkin, N.C.
Feb. 26	Fayetteville, WVA.
Mar. 17-18	Charlotte, N.C.
April 15	Raleigh, N.C.
May 5-6	Greenville, S.C.
May 12	Durham, N.C.
May 20	Gastonia, N.C.
May 27	Roanoke, Va.

Wayne & Gerry
WILLIAMS
RADIO SALES

REPEATER JOURNAL ADVERTISING RATES

Effective 1 January 1983

The Repeater Journal is a 3 column magazine with overall page dimension of 8½ x 11 inches. Our page size enables a wide variety of ad sizes from full page down to one column inch size.

Column Widths are 1 col: 2-1/4-in., 1-1/2 col: 3-1/2-in., 2 col: 4-5/8-in., 3 col: 7-1/8-in. Ad widths will be based only with the specified column widths.

DEADLINES: New advertising copy must be in the hands of our Advertising Manager no later than the first of the month prior to publication month.

DEADLINES

FEB. Issue - Jan. 1	MAY Issue - Apr. 1
AUG. Issue - Jul. 1	NOV Issue - Oct. 1

If we have not received new ad copy from you, your ad published in the previous issue will be repeated at the standard advertising rate.

CVRA REPEATER JOURNAL advertising rates apply to exact size, camera ready copy. We can provide typesetting and reduce art for your ad at our cost. Composition and typesetting for full page ad approximately $25 to $28. Half page ad from $12 to $15. Reduction of artwork for ad with no type needed is $4.50. For color ads (One additional color plus black) add $25.00.

The Repeater Journal layout size is very close to most National magazines. If you wish to use a page from one of the magazines, to promote your product, we can reshoot on the camera, insert your store name and customize for your particular application. Be sure to submit a clean, unwrinkled copy of the magazine page.

Contract advertising may be billed quarterly at the request of Advertiser. No volume discounts or contract discounts are available. It is the advertisers responsibility to cancel or request changes in advertising at the time he pays his bill, or before ad deadline, otherwise, advertising will be repeated until further notice.

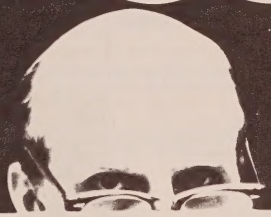
BUSINESS CARDS, CLASSIFIED ADS AND HAMFEST advertising must be sent accompanied by full payment for insertion. Advertisers who have not paid for previously published advertising before upcoming issue deadline, cannot have any advertising inserted until account is paid in full.

The CVRA REPEATER JOURNAL cannot be responsible for errors in advertising, or held accountable for equipment or accessories that do not live up to the advertised claim. We are not responsible and cannot guarantee insertion of advertising received after deadline.

Advertising copy MUST be mailed to: REPEATER JOURNAL ADV. MANAGER, KEN HOLLIDAY, WA4DYY, 1923 HALIFAX COURT, HIGH POINT, N.C. 27260.

THINK

Hmmmmm . . .
Let's see, mail too expensive, national magazines cost a fortune . . . hmmmmm . . . Repeater Journal, largest regional magazine in the Nation . . . 4,000 circulation . . . rates reasonable, less than 2¢ per person . . . most all other dealers are in here . . . hmmmm . . . . . dang! I better get my ad in Repeater Journal, I hear their advertisers get results . . . that's what I need Repeater Journal advertising . . . and RESULTS!



REPEATER JOURNAL ADVERTISING SIZES AND RATES

Ins. Frt. or Ins. Bk. Cover	7-1/8" x 9-7/8"	$90.00
Full Page	7-1/8" x 9-7/8"	75.00
Full Page Bleed (any sides)	8-1/2" x 11"	90.00
2/3 Page (Vertical)	4-5/8" x 9-7/8"	55.00
1/2 Page (Horizontal)	7-1/8" x 4-3/4"	42.75
1/2 Page (Vertical)	3-1/2" x 9-7/8"	42.75
1/2 Page (Vertical 2-col)	4-5/8" x 7-1/8"	42.75
1/4 Page (Vertical Only)	3-1/2" x 4-3/4"	24.00
1/3 Page (Vertical Only)	2-1/4" x 9-7/8"	30.00
1/6 Page (Vertical)	2-1/4" x 4-3/4"	16.00
1/6 Page (Horizontal)	4-3/4" x 2-1/4"	16.00
1/12 Page (Vertical Only)	2-1/4" x 2-1/4"	9.00
Business Cards – Standard Size	(4 Issue Contract Only)	14.00/yr. In Advance

Classified Ads (30 Words Maximum per ad) In Advance 2.50
Color (1 additional color plus black) An Size add 25.00

Sizes listed above are width by length in that order. Ads which run lengths between sizes listed above will be billed according to column inch rate at midpoint. Prices above are for exact size, camera ready positive photoprint, or pasteup. Camera work, typesetting additional. No charge for layout.

1984 is Just around the corner. The economy is improving. Don't be left behind – get your share of the Amateur market. Our regular advertisers know it pays to present your message in the "result getting" Repeater Journal.

BUSINESS CARD ADVERTISING

(919) 998-2884

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Flight & Ground Instruction
Designated Pilot Examiner
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KB4AKM

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DEALERS, BUSINESSES, CLUBS
REPEATER OWNERS – DISPLAY
YOUR MESSAGE HERE – 4-Issues
$14.00 A YEAR PREPAID
WRITE OUR SALES MANAGER
(1-Year-$14 Minimum Contract)

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W4LPL/REPEATER
"The Red Carpet Repeater"
Fayetteville, North Carolina
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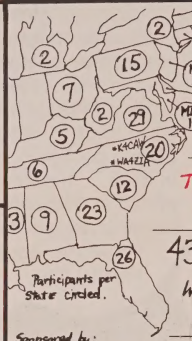
JIM McNAIRY

MCNAIRY & ASSOCIATES
1834 BANKING STREET
GREENSBORO, N.C. 27408

N4EEM



The largest UHF NET in the world, covering a 1000 mile diameter coverage area! Averaging 30 checkins in 12 States per NET. Since 1979 over 190 Stations in 18 states.

The EAST COAST 70 cm NET

432.090 mHz SSB/CW

WEDNESDAYS AT 9 PM EST/EDT

Participants per State circled.

Sponsored by:
The SOUTHERSTERN VHF SOCIETY
(Contact: WD4MIBK, Charles Osborne for details)
our motto: "...meeting the technological challenge."

W4EJC

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ANDERSON, S.C. 29621

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HWY. 86 S. HILLSBOROUGH, N. C. 27278
Yesterday's Home for Tomorrow's Living

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wcj

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(919) 855-7017 HOME
16/76 COFFEE

John L. Washburn
Account Executive

woodrow conrad insurance agency, inc.
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Sales Engineer WA4WZP
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Western Electric
Atlanta Cable Works
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W4IZI
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REPEATER JOURNAL

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WD4KWP

J. Tom Park
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HOLIDAY REALTY CO.
BUSINESS BROKERS AND EXCHANGE
1913 Norwich Dr.
Greensboro, NC 27410

MLS

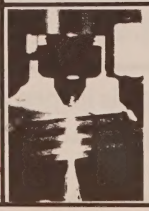
WA4NHC

W. B. "CHICK" HOLLIDAY
President

Ofc.: (919) 294-0991
Res.: (919) 294-0990

DIAL **BR549**
(BLUEFIELD REPEATER 145.49)

Bluefield Hamfest
Computer and Satellite TV Fair
(AUGUST 26, 1984)



Laser Cut Dies

KEN HOLLIDAY
Sales
WA4DYY

HOLIDAY STEEL RULE DIE CORP.

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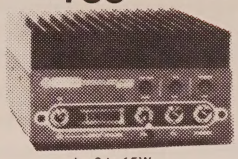
TOKYO HY-POWER AMPLIFIERS

HL-30V
59.00
List $69.95

IN: 150mw to 4W
Out: 1 to 30W

Compact, Light, 2-meter FM Amplifier covers 144-148 mhz. Reverse polarity protection. Draws approx. 4A max. Excellent for handheld radios. Best power for cost on market today.

HL-82V
List $159.00
135.00



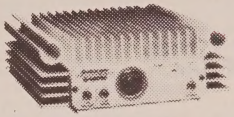
In: 3 to 15W
Out: 30 to 80W

Compact 2-meter amplifier covers 144-148 mhz. FM/SSB/CW. Has accurate watt meter, hi/low power output, MOSFET receive preamp. Draws 13A max. Comes with mobile bracket, connector cable.

HL-160V
Lo In: 1-5W
Hi In: 10-15W
Out: 80-160W
285.00
List $359.00

Truly the "Boss Hawg" on the amplifier market. Covers 144-148 Mhz. CW/SSB/FM. Dual level input gives capability of full drive with H/T or with 10-15 watt mobile radio. JFET preamp. Lo/Hi output, accurate watt-meter. Comes with connector cables. Max. current draw 12-23A.

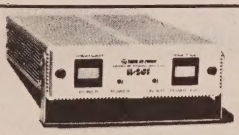
HL-160V/25
265.00



In: 25-30W
Out: 160W
List $299.95

160-watts output achieved with a pair of rugged MRF247 transistors. Drive requirements 10-25-watts input. 25-watts in gives 150-watts out. Selectable hi/lo output. VHF Wattmeter.

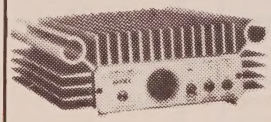
HL-20U
105.00



In: 1-3W
Out: 15-20W

Compact, lightweight amplifier for the 70 cm band. Covers 440-450 mhz. FM/SSB/CW operation. Hi/lo output power switch. Mobile bracket. Reverse polarity protection. Draws 4A max.

HL-90U
289.00



In: 5-17W
Out: 60-90W

Power for 70 cm. Covers 430-440 mhz with 80-90 watts FM/SSB/CW. Has Hi/Lo output switch, accurate wattmeter. Lo Noise GaAsFET preamp on Rx. Reverse polarity protection. Draws 5-17A max.
List $359.95

We Stock What We Advertise - For Immediate Shipment - NO CREDIT CARDS!

Add $2.50 UPS Shipping or $4.15 UPS-COD. N.C. Res. Add 4% Tax

WELZ SWR&POWER METER

They're New! Designed Like You Have Needed!

SP-15M

List $69.95
59.00

SWR/Power. Handles up to 200 watts. Three power scales. Covers 1.8 mhz. thru 150-mhz. Our most popular model for HF Bands thru 2-meters. Accuracy +/– 10%.

SP-10X

List $37.00
35.00

Pocket-sized convenient for carrying with you. Handles to 200-watts. Covers 1.8 thru 150 mhz. (HF thru 2-meters). Ideal for checking mobile. Accuracy +/– 15%.

SP-45M

List $85.00
79.00

SWR/Power. Handles up to 100-watts. Three power scales. Covers 140 mhz. thru 470 mhz. Excellent low priced unit for UHF/VHF work. Accuracy +/– 10%.

SP-600

List $159.00
145.00

SWR/Power. Handles up to 2 KW (Peak) on HF Bands. 200 watts VHF/UHF. Covers 1.6 mhz. thru 520 mhz. Built-in sensors, switch 3 diff. transceivers for instant reading. 3 Power ranges. Accuracy +/– 10%.

OTHER WELZ METERS AND DUMMY LOADS

SP-250 - HF & 6-Meters. 2KW. 3 Power ranges (List $79.95)..... 69.00
SP-350 - 1.8 - 500 mHz. 200W - 2-sensers (List $109.95)..... 92.00
TP-05X - 50 - 500 mHz. 5-watt H/T Power Checker w/BNC)..... 18.00
TP-25A - 50 - 500 mHz. 25-watt Power Checker w/PL259..... 36.00

CT-15A - DC - 500 mHz. 50-watt Peak Dummy Load w/PL259..... 11.00
CT-150 - DC - 150 mHz. 500-W Peak Oilless Dummy Load..... 42.00
CT-300 - DC - 250 mHz. K 1-KW Peak Oilless Dummy Load..... 65.00

Add $2.00 UPS Shipping or $3.65 UPS-COD N.C. Res. Add 4% Tax.

KDK FM2030

LIST $299.00
259.00

Extra Power Plugs – $2.50
Extra Mike Plugs – $2.50
Add $3.00 UPS Shipping or $4.65 UPS-COD
N.C. Res. Add 4% Sales Tax
NO Bank Cards Please

90 Day Limited Warranty – Now — 2-year extended Service Plan!

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WAYNE & GERRY WILLIAMS
600 LAKEDALE ROAD DEPT J
COLFAX, N.C. 27235
(919) 993-5881 Noon to 10 PM EDT

Coming Events

1984 HAMFEST DATES

JANUARY

14-15 ..... Sarasota Hamfest, SARASOTA, FLA.
15 ..... Winter Am. Radio & Computer Show, RICHMOND, VA.
28* ..... Hamfest, SEVIERVILLE, TN.

FEBRUARY

19 ..... Hamfest, ELKIN, N.C.
25* ..... Swapfest, MORRISTOWN, TN.
26* ..... Winterfest, VIENNA, VA.
26 ..... Hamfest, FAYETTEVILLE, WVA.

MARCH

17-18 ..... N.C. State ARRL Conv./Hamfest, CHARLOTTE, N.C.
17-18 ..... Hamfest, ORLANDO, FLA.
24-25* ..... Hamfest, COLUMBUS, GA.

APRIL

15 ..... RARS Hamfest, RALEIGH, N.C.
15* ..... Hamfest, KENNESAW, GA.
21* ..... Hamfest, OAK RIDGE, TN.
20-22 ..... Baloneyfest, HENRY HORTON ST. PARK, TN.
27-29* ..... Dayton Hamvention, DAYTON, OH.

MAY

5-6* ..... Hamfest, GREENVILLE, S.C.
12* ..... Durhamfest, DURHAM, N.C.
12-13* ..... Hamfest, BIRMINGHAM, ALA.
19* ..... Hamfest, DALTON, GA.
19-20* ..... Hamfest, LAKE HARTWELL, GA.
20* ..... Hamfest, GASTONIA, N.C.
26-27 ..... Hamfest, KNOXVILLE, TN.
27 ..... Hamfest, ROANOKE, VA.
27* ..... Hamfest, HARMANS, MD.

JUNE

3* ..... Hamfest, HUMBOLT, TN.
3* ..... Ole Virginia Hamfest, MANASSAS, VA.
3* ..... Tri-State ARA Hamfest, HUNTINGTON, WVA.
16-17* ..... Hamvention, ATLANTA, GA.
30-July 1* .... WVA State Radio Conv., JACKSON'S MILL, WVA.

JULY

7-8* ..... John Ross Tradefest, ROSSVILLE, GA.
15* ..... Summer Swapfest, CARY, N.C.
21* ..... Hamfest, ANNISTON, ALA.
21-22* ..... Hamfest, CROSSVILLE, TN.
22* ..... TTSRAC Hamfest, WHEELING, WVA.
21-22* ..... Hamfest, CHARLESTON, S.C.
29* ..... Hamfest, NASHVILLE, TN.
28-29* ..... Hamfest, ASHEVILLE, N.C.
29 ..... BRATS Maryland Hamfest, W. FRIENDSHIP, MD.
29* ..... Jackson County Hamfest, RIPLEY, WVA.

AUGUST

4-5* ..... Hamfest, JACKSONVILLE, FLA.
5* ..... SVARC Hamfest (Winchester), BERRYVILLE, VA.
18-20* ..... Huntsville, ALA.
26 ..... Hamfest, BLUEFIELD, WVA.
26* ..... Hamfest, CEDARS OF LEBANON PARK, TN.
26* ..... Confederate Signal Corps Hamfest, MADISON, GA.
26* ..... Hamfest, MORGANTOWN, WVA.
25-26* ..... Central Alabama Hamfest, MONTGOMERY, ALA.

SEPTEMBER

1-2* ..... Hamfest, SHELBY, N.C.
8-9* ..... Central Ga. Hamfest, WARNER ROBBINS, GA.
8-9* ..... Tri-Cities Hamfest, GRAY, TN.
8-9* ..... Swapfest & Picnic, CLEVELAND, TN.
9* ..... Hamfest, GAITHERSBURG, MD.
15* ..... WCARS II Swapfest, GREENWOOD, S.C.
16* ..... Hamfest, CINCINNATTI, OH.
16* ..... Hamfest, AUGUSTA, GA.
23* ..... Hamfest, GAINESVILLE, GA.
22-23 ..... Roanoke Div. ARRL Conv. VIRGINIA BEACH, VA.
22-23 ..... KY. ARRL Conv. and Hamfest, LOUISVILLE, KY.

OCTOBER

7* ..... Hamfest, ROCK HILL, S.C.
7* ..... Hamfest, ROME, GA.
14* ..... Hamfest, MAYESVILLE, N.C.
13-14* ..... Hamfest, CLEARWATER, FLA.
13-14* ..... Hamfest, MEMPHIS, TN.
20-21* ..... Hamfest, CHATTANOOGA, TN.
20-21* ..... ARCS Hamfest, SAVANNAH, GA.

NOVEMBER

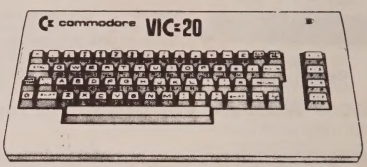
3-4* ..... Hamfest, STONE MT., GA.
4* ..... Hamfest, CONCORD, N.C.
24-25* ..... Greater GBO Hamfest, GREENSBORO, N.C.

***NOT CONFIRMED (Date is based on Last Years Information)**

(Editor's Note) Hamfest dates marked with an asterisk have not been conformed to the Repeater Journal. Dates are based on last year's information. Clubs sponsoring hamfests who have not sent in their 1984 date should send information to the Repeater Journal Editor. Hamfest Date Corrections, and Advertising Deadline for the February issue is January 2, 1984.

SOFTWARE FOR commodore

CW & RTTY Ham Packages, Utilities, Games, Educational, Business.



• PERIPHERALS • SOFTWARE

Commodore VICMODEM	$69.00
VIC-1210 3K Ram Expander	$39.95
VIC-1210 8K RAM Expander	$59.00
VIC-1111 16K RAM Expander	$89.00
Discwasher Pointmaster Joystick	$15.00
Heswriter Word Processor (C64)	$49.95
Heswriter Word Processor (VIC-20)	$39.95
Hes Agressor	$35.95
RAK CW Software (C64)	$18.95
RAK CW/RTTY Software (C64)	$22.95
RAK Ham Antennas (C64)	$ 6.95
RAK WAS Record (C64)	$ 6.95
RAK DXCC Record (C64)	$ 6.95
RAK Morse Trainer (C64)	$ 8.95
RAK C64 Maillist (300 addresses)	$15.95
RAK C64 File (multi-Purpose)	$10.95
RAK CW Software (VIC-20 ±3K)	$18.95
RAK CW/RTTY Software (VIC-20 ±8K)	$22.95
RAK Micro-Log (VIC-20 ±8K)	$10.95
RAK Ham Antennas (VIC-20)	$ 6.95
RAK Morse Code Tutor (VIC-20)	$ 5.95
RAK Morse Trainer (VIC-20 ±8K)	$ 8.95
RAK WAS Record (VIC-20 ±3K)	$ 6.95
RAK DXCC Record (VIC-20 ±8K)	$ 6.95
RAK Name/Address File (VIC-20)	$ 6.95
RAK VIC FILE (VIC-20 ±3K)	$10.95
RAK ATARI CW Software (400/800)	$18.95

(Other Peripherals & Software Available)
All Items Shipped Prepaid. N.C. Residents Add 4% Sales Tax

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DISCOUNT COMPUTER SYSTEMS

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HELP!

In Dire need of schematic for Hamtronics CA-144 VHF Converter. 28mHz I.F. I have the kit but lost the schematic. The box has stamped on it 8010, which I take to mean October 1980, which was about when I bought it. Rev. A is NOT the one I need. Hamtronics is no help. Please. STEPHEN BACH, Rt. 2, Box 89, Scottsville, Va. 24590. (804) 286-3466 AA4B. Thank you!

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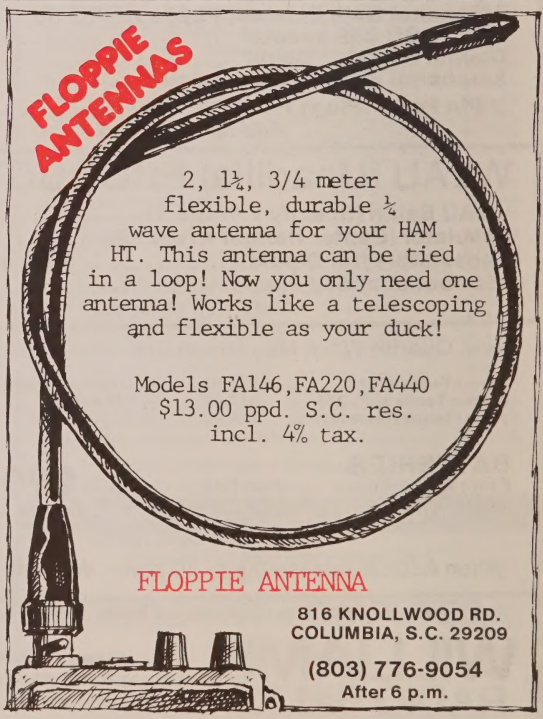
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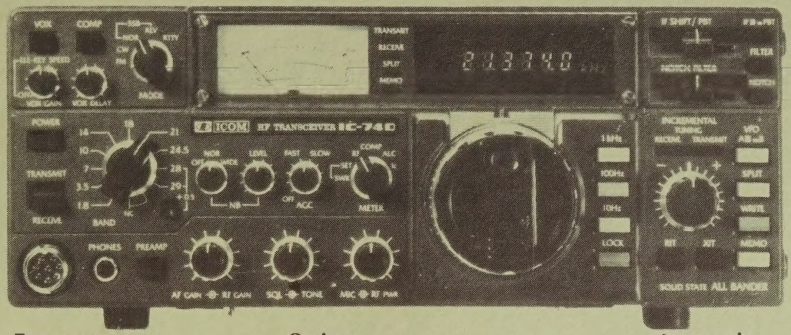

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EX-52	455 KHz Xtal Filter	500 Hz	-6dB
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EX-44	455 KHz SSB Filter	2.4 KHz	-6dB
EX-238	Built-in type power supply		

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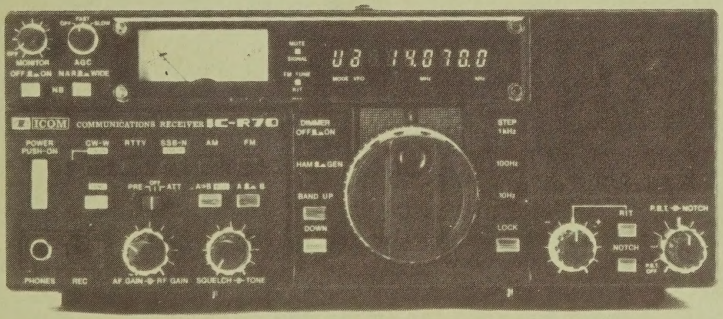

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Options

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EX261	Transceive Unit (works with IC-720 or IC-720A)

12 Volt Plug Kit

Accessories

HP-1 Headphones
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